ORDER NO. VRD9009M163

Service Manual

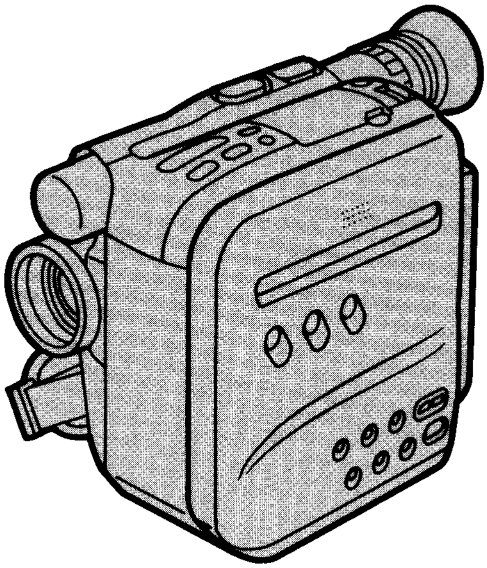
General Description
Adjustment Procedures
Block / Schematic Diagrams
Exploded Views / Parts List

Panasonic VHS C VHS PAL 625

HQ

VHS-C Movie

NV-S1E/B/A
NV-S100EN



SPECIFICATIONS

ITEM	SPECIFICATION
POWER	Source: BATTERY; DC 6.0V Consumption; Recording mode; 8.4W (Battery operation)
VIDEO RECORDING SYSTEM	4 rotary heads, helical scanning system PAL
TAPE FORMAT	VHS-C Cassette Tape (Tape width 12.7mm)
TAPE SPEED	SP mode: 23.39mm/s LP mode: 11.7mm/s Record/Playback Time SP mode: 45min. with NV-EC45E LP mode: 90min. with NV-EC45E
CAMERA	PICK-UP ELEMENT: CCD (Charge Coupled Device)
	STANDARD ILLUMINATION: 1,400 lux
	MINIMUM REQUIRED ILLUMINATION: 5 lux
	LENS: Built-in 6 : 1 Power Zoom Lens with Digital AI Auto Focus, Auto Iris, Auto Focus System, F1.4 (6.7~40mm), Filter Diameter 27mm
	IMAGE SENSOR: 1/3 inch CCD Image Sensor
	VIEW FINDER: 2/3" Electric View Finder

ITEM	SPECIFICATION
VIDEO	HEADS: 4 rotary heads, 1 flging erase head
	OUTPUT: PHONO CONNECTOR; 1.0Vp-p 75Ω unbalanced
AUDIO	HEAD: 1 Stationary head (Normal Audio)
	OUTPUT: PHONO CONNECTOR; −8dB 600Ω unbalanced
WEIGHT	Approx. 780g (without Battery Pack)
DIMENSIONS	95.3(W) × 133(H) × 145(D) mm
STANDARD ACCESSORIES	1 pc. AC Adaptor 1 pc. Battery Pack 1 pc. Cassette Adaptor 1 pc. Shoulder Strap 1 pc. AV Output Cable 1 pc. DC Input Cable 1 pc. Battery for Cassette Adaptor Operation 1 pc. Battery for Clock Operation

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

INTRODUCTION

This service manual contains technical information which will allow service personnels to understand and service this model.
Section 1 presents you with some general information of features and controls, enabling you to become familiar with each function.
Section 2 contributes to your mechanical and electrical adjustment as well disassembly and replacement procedures.
In the case of very common information relating to other models like mechanical adjustments, please refer to each service manual.
Section 3 contains block diagrams which offers you information for checking and understanding each circuit. Schematic diagrams which give you detailed information such as waveforms, voltage data, function e.t.c. ...
Section 4 contains exploded views and parts list.
Please place orders using the parts list and not the drawing reference numbers.
If the circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original service manual.

CONTENTS

TECHNICAL INFORMATION

SECTION 1 GENERAL DESCRIPTIONS

1-1. CONTROLS AND COMPONENTS 1-1
1-2. EASY OPERATIONS 1-2
1-3. INDICATIONS IN THE ELECTRONIC VIEWFINDER (EVF) 1-3
1-4. INDICATION IN THE LCD DISPLAY 1-3
1-5. BATTERY PACK 1-4
1-6. SETING THE CLOCK 1-5
1-7. PLAYBACK VIA TV SET (CONNECTIONS) 1-5
1-8. ACCESSORIES 1-5

SECTION 2 ADJUSTMENT PROCEDURES 2-1
2-1. DISASSEMBLY PROCEDURES 2-1
2-2. REPLACEMENT OF THE CYLINDER UNIT 2-1
2-3. DISASSEMBLY PROCEDURES OF ZOOM MOTOR AND FOCUS MOTOR 2-5
2-4. ASSEMBLY ADJUSTMENT PROCEDURES OF MECHANISM 2-8
2-5. INTERCHANGEABILITY ADJUSTMENT 2-16
2-6. ELECTRICAL ADJUSTMENT PROCEDURES 2-19
LOCATION OF TEST POINTS & CONTROLS (1) 2-41
LOCATION OF TEST POINTS & CONTROLS (2) 2-52

SECTION 3 BLOCK DIAGRAMS & SCHEMATIC DIAGRAMS 3-1
3-1. CCD DRIVE BLOCK DIAGRAM 3-1
3-2. PROCESS BLOCK DIAGRAM 3-4
3-3. AUTO FOCUS BLOCK DIAGRAM 3-11
3-4. DIGITAL MEMORY BLOCK DIAGRAM 3-15
3-5. SYSTEM CONTROL BLOCK DIAGRAM 3-19
3-6. SERVO BLOCK DIAGRAM 3-23
3-7. LUMINANCE & CHROMINANCE BLOCK DIAGRAM 3-27
3-8. E.V.F. SCHEMATIC DIAGRAM 3-31
3-9. E.V.F. C.B.A. 3-33
3-10. PROCESS C.B.A. 3-35
3-11. PROCESS SCHEMATIC DIAGRAM 3-39
3-12. SENSOR (CCD DRIVE, AUTO FOCUS AND DIGITAL MEMORY Sections) SCHEMATIC DIAGRAM 3-44
3-13. SENSOR (CCD DRIVE, AUTO FOCUS AND DIGITAL MEMORY Sections) C.B.A. 3-50
3-14. MAIN (POWER, SERVO, SYSTEM CONTROL, LUMINANCE & CHROMINANCE, SUB VIDEO AND AUDIO Sections) C.B.A. 3-53
3-15. POWER SCHEMATIC DIAGRAM 3-57
3-16. SYSTEM CONTROL SCHEMATIC DIAGRAM 3-60
3-17. SERVO SCHEMATIC DIAGRAM 3-65
3-18. LUMINANCE & CHROMINANCE SCHEMATIC DIAGRAM 3-69
3-19. SUB VIDEO SCHEMATIC DIAGRAM 3-72
3-20. AUDIO SCHEMATIC DIAGRAM 3-75
3-21. DRIVE SCHEMATIC DIAGRAM 3-77
3-22. DRIVE C.B.A. 3-79
3-23. VTR OPERATION SCHEMATIC DIAGRAM 3-81
3-24. VTR OPERATION C.B.A. 3-83
3-25. CIRCUIT BOARD LAYOUT 3-85
3-26. INTERCONNECTION SCHEMATIC DIAGRAM 3-87
3-27. ICs & TRs INFORMATION 3-90

SECTION 4 EXPLODED VIEWS & PARTS LIST 4-1
4-1. EXPLODED VIEW 4-1
❶ VTR MECHANISM SECTION (1) 4-1
❷ VTR MECHANISM SECTION (2) 4-2
❸ VTR MECHANISM SECTION (3) 4-3
❹ VTR MECHANISM SECTION (4) 4-4
❺ CAMERA LENS SECTION 4-5
❻ FRAME & CASING PARTS SECTION (1) 4-6
❼ FRAME & CASING PARTS SECTION (2) 4-7
❽ PACKING PARTS & ACCESSORIES SECTION 4-8
4-2. MECHANICAL REPLACEMENT PARTS LIST 4-9
4-3. ELECTRICAL REPLACEMENT PARTS LIST 4-12

Technical Information

Service caution

1. Adjustment the Camera Section

In the camera section, EEPROM (Electric programmable Read Only Memory) is adopted as adjustment element instead of conventional variable resistor.
EEPROM memorize the adjustment value as digital data and data to D/A (Digital to Analogue) converter to be changed DC voltage which is supplied to adjustment point as shown in Fig. T1.

Thus, when adjusting the Camera proess, it is necessary to change the adjustment data which is stored in EEPROM. For this prupose, EVR (Electric Variable Resistor) Fixture enables to communicate with EEPROM, D/A converter directly and can change its stored adjustment data.

The EVR Fixture is connect with camera as shown below and is used. (For more details, Please refer to Camera adjustment section).

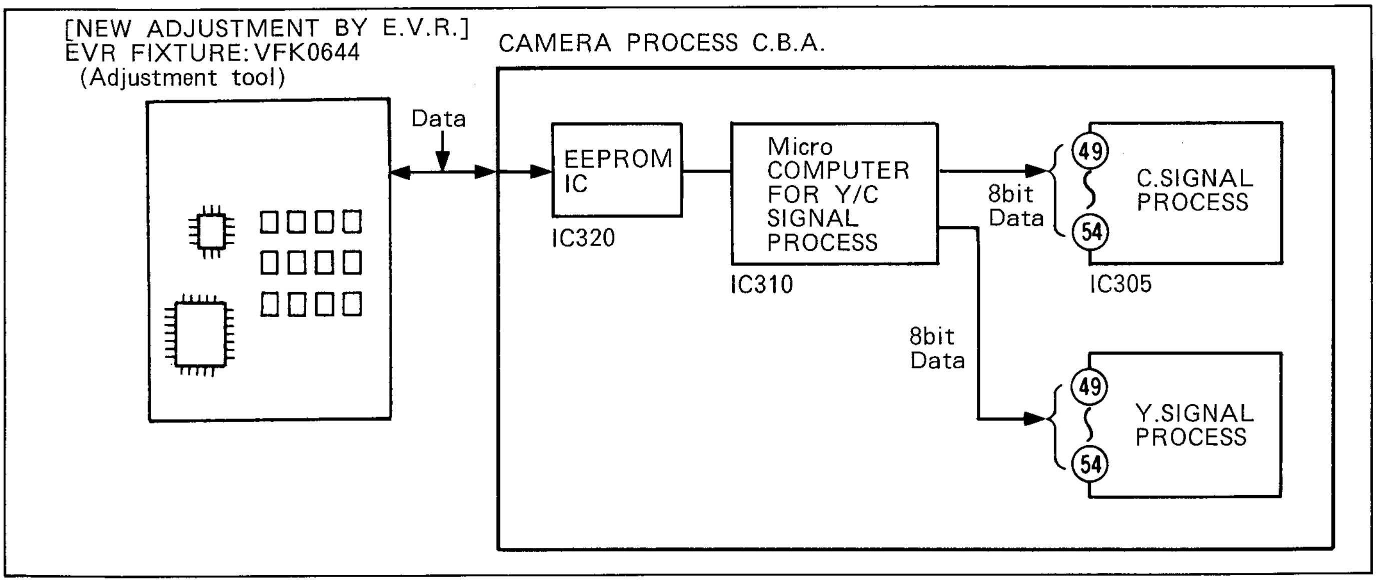

[NEW ADJUSTMENT BY E.V.R.]
EVR FIXTURE: VFK0644
(Adjustment tool)
Data
CAMERA PROCESS C.B.A.
EEPROM IC
IC320
Micro COMPUTER FOR Y/C SIGNAL PROCESS
IC310
8bit Data
49
54
C.SIGNAL PROCESS
IC305
8bit Data
49
54
Y.SIGNAL PROCESS

Fig. T1

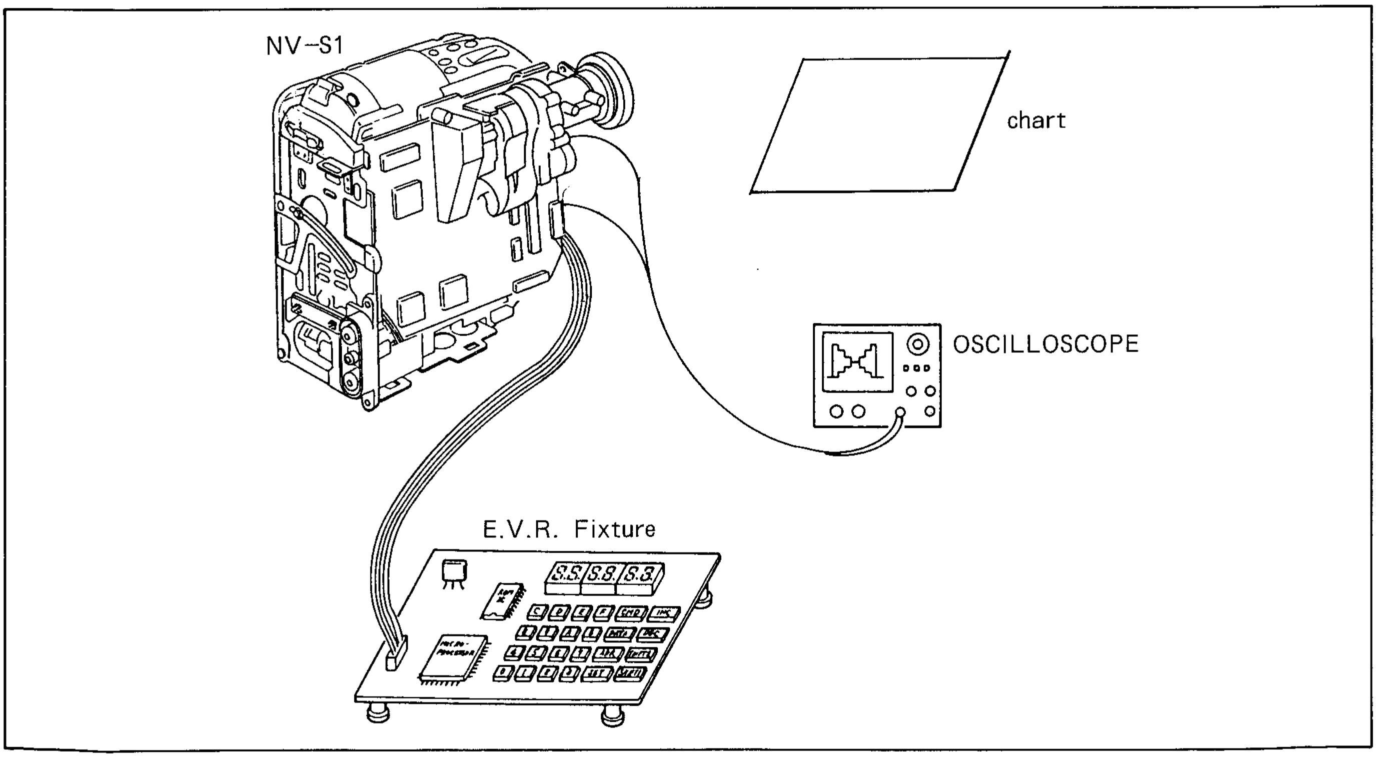

NV-S1
chart
OSCILLOSCOPE
E.V.R. Fixture

Fig. T2

2. Service Extension Cables

Use following Extension cable when checking or adjusting the individual circuit board assembly (C.B.A) of video part or camera part.

NO.	PART NO.	Q' TY	PART NAME	CONNECTION
1	VFK0667	1 pc	30 PIN FLAT CABLE	B201 (SENSOR C.B.A.) TO B301 (PROCESS C.B.A.)
2	VFK0667	1 pc	30 PIN FLAT CABLE	B202 (SENSOR C.B.A.) TO B302 (PROCESS C.B.A.)
3	VFK0668	1 pc	27 PIN EXTENSION CABLE	P2001 (MAIN C.B.A.) TO P2101 (SUB SERVO C.B.A.)
4	VFK0669	1 pc	25 (24) PIN EXTENSION CABLE	P2002 (MAIN C.B.A.) TO FP301 (PROCESS C.B.A.)
5	VFK0670	1 pc	13 PIN EXTENSION CABLE	P2001 (MAIN C.B.A.) TO P2101 (SUB SERVO C.B.A.)
6	VFK0672	1 pc	13 PIN EXTENSION CABLE	P6003 (MAIN C.B.A.) TO P801 (EVF C.B.A.)

Fig. T3

[How to Use Extension Cables]

(1) Connection between Main C.B.A. and Sub Servo.

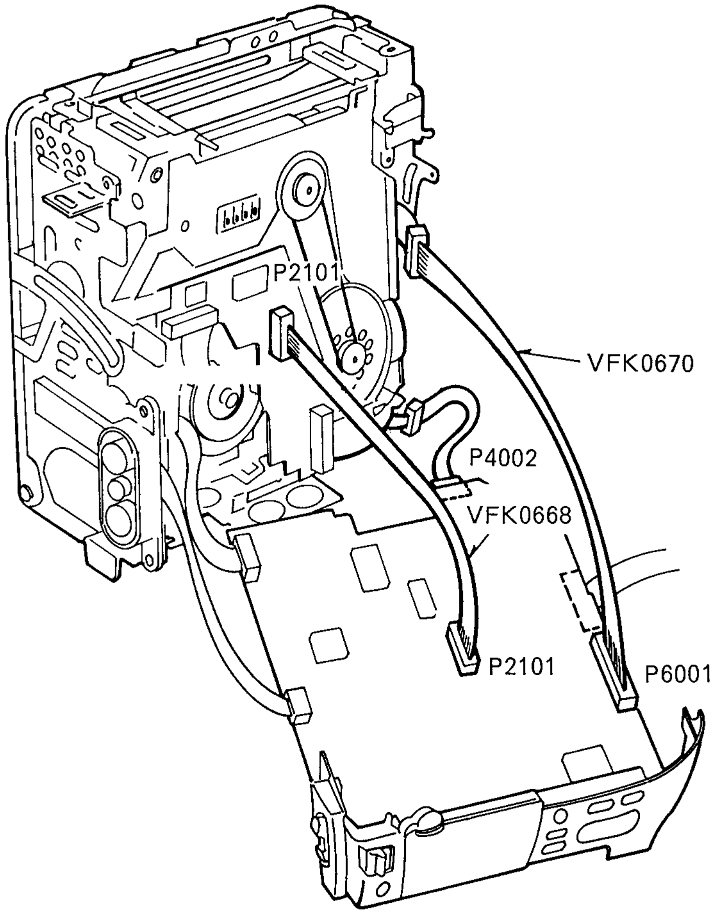


Fig. T4

(2) Connection between process C.B.A. and AF C.B.A.

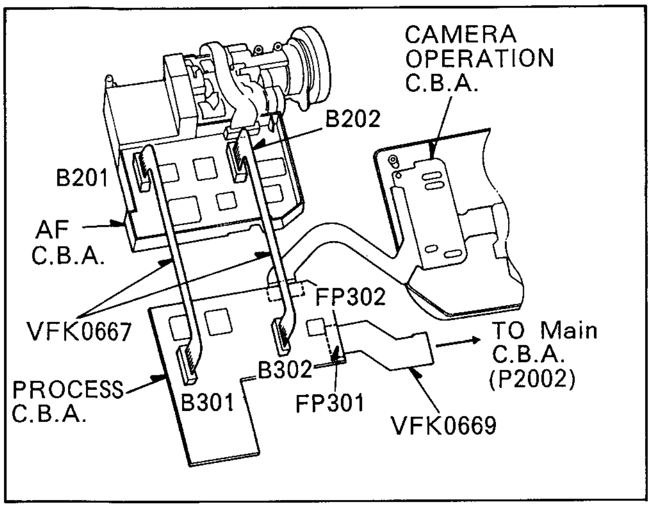

CAMERA OPERATION C.B.A.
B202
B201
AF C.B.A.
VFK0667
FP302
TO Main C.B.A. (P2002)
B302
PROCESS C.B.A.
B301
FP301
VFK0669

Fig. T5

(3) Connection between Main C.B.A. and EVF C.B.A.

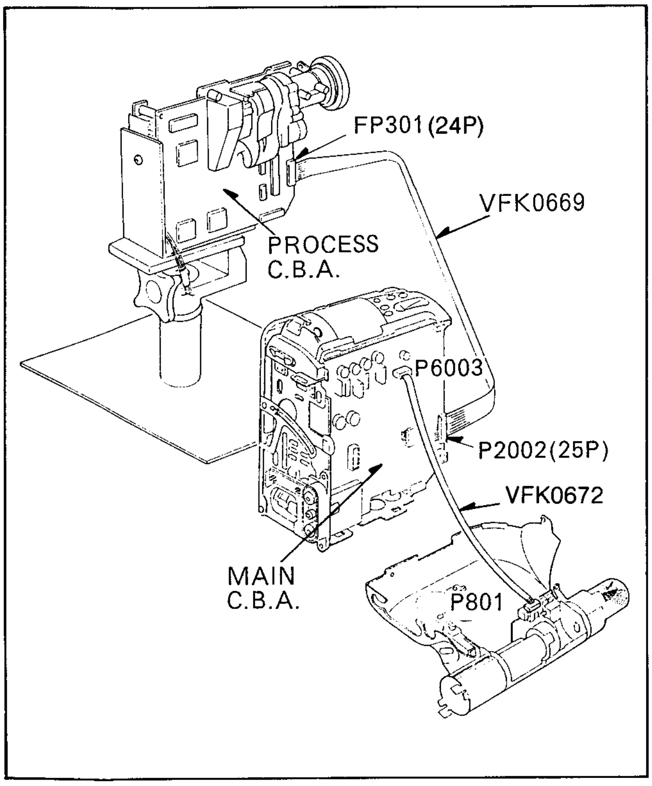

FP301(24P)
VFK0669
PROCESS C.B.A.
P6003
P2002(25P)
VFK0672
MAIN C.B.A.
P801

Fig. T6

3. How To Replace 0.5mm pitch IC

(Required tools)
* Spot heater: (HS–600,etc) or cordless soldering iron: (80AEX,etc) (HOT Blowing type)
* Blower Nozzle for spot Heater: (HS–611.614.615.618,etc)
* Tweezers
* Paper tape (Non–flammable Type)
* Glue (paper glue, etc, to fix IC momentary)
* Soldering sucker. (De–solder braid)
* 0.3mm diameter solder
* Solder flux
* Special soldering iron (HS–11,etc) (sharp tip pencil type) (Removal).

(1) Stick the paper tape around the IC for protection of chip components when hot air is blowed.
(2) Blow the hot air from upright position to the legs of IC using spot heater (attaching suitable nozzle.)

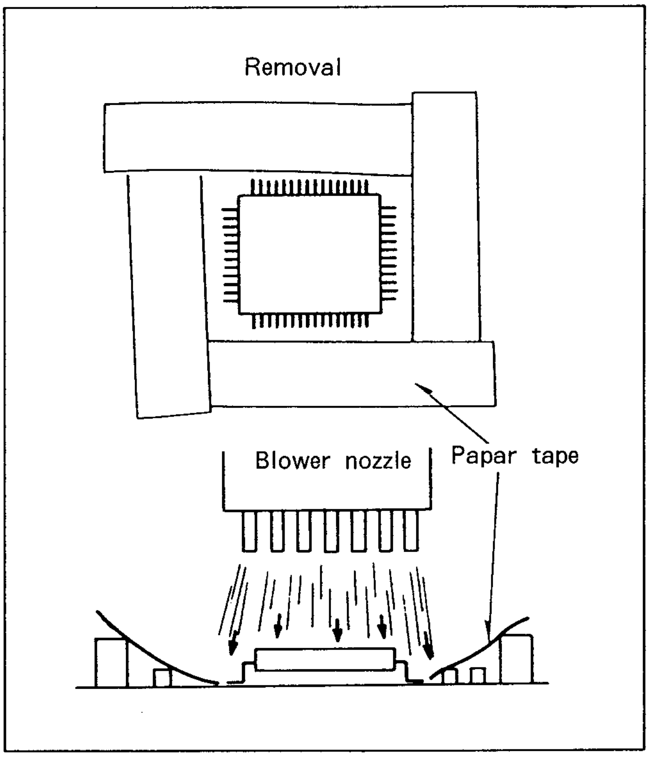

Removal
Blower nozzle
Papar tape

Fig. T7 Removal of IC

(3) When solder is melting, pick up the IC using tweezers.
(4) Take paper out from C.B.A.

(Ass emble)

(1) Remove the solder which is remained oh the round of IC using solder sucker. (De–Solder braid).
(2) Attach the plue little bit on the centre of IC round.
(3) Put the new IC on to round and align the position of each pins with round.
(4) Solder the 2 pins of opposite angle of IC with 0.3mm solder and confirm the position.
(5) Solder the all pins of IC with 0.3mm solder and 0.3mm tip solder iron.
(6) Confirm if all pins are connected.
(7) If solder becomes bridge as shown in Fig. T9 correct the solder using solder sucker (De–solder braid).

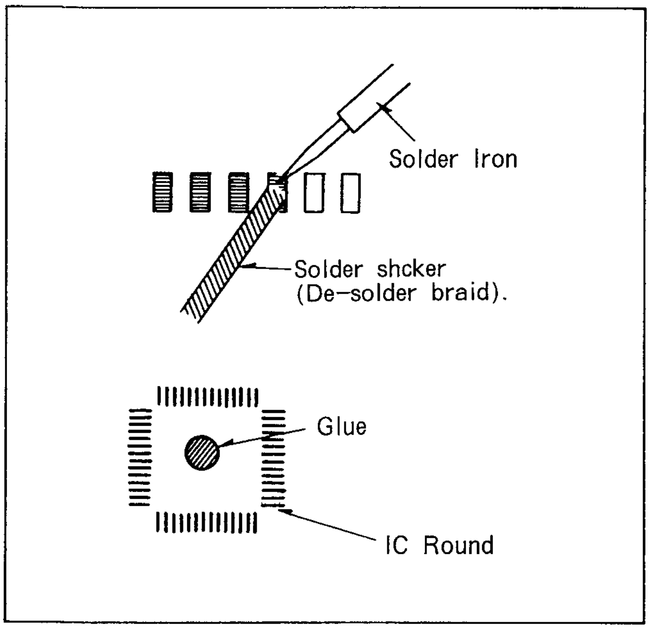

Solder Iron
Solder shcker
(De–solder braid).
Glue
IC Round

Fig. T8 cleaning the remained solder

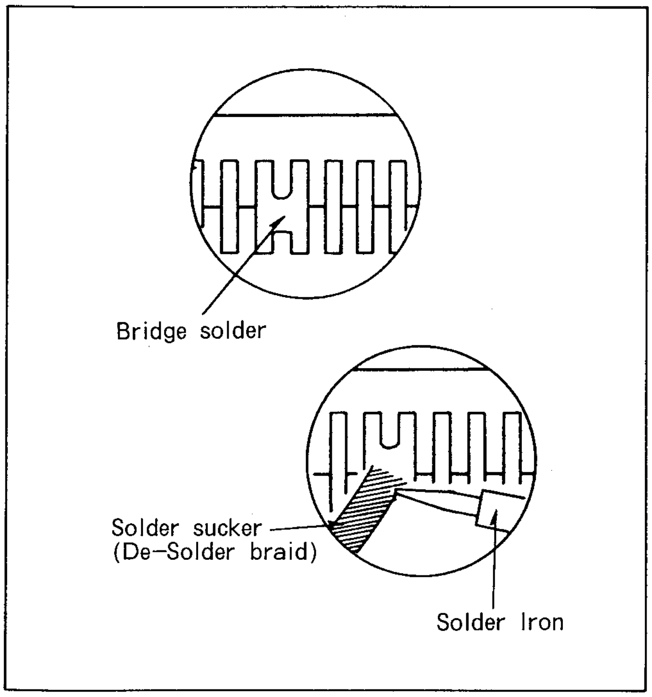

Bridge solder
Solder sucker
(De–Solder braid)
Solder Iron

Fig. T9 Correcting bridge solder

4. How To Replace Capacitor. (New)

(1) Heat the one side of capacitor with solder Iron. and push its one side up by finger.
(2) Remove one side of leg.
(3) Heat the opposite side of capacitor and remove it.
(4) When replacing new capacitor, put the capacitory and solder it as conventional.

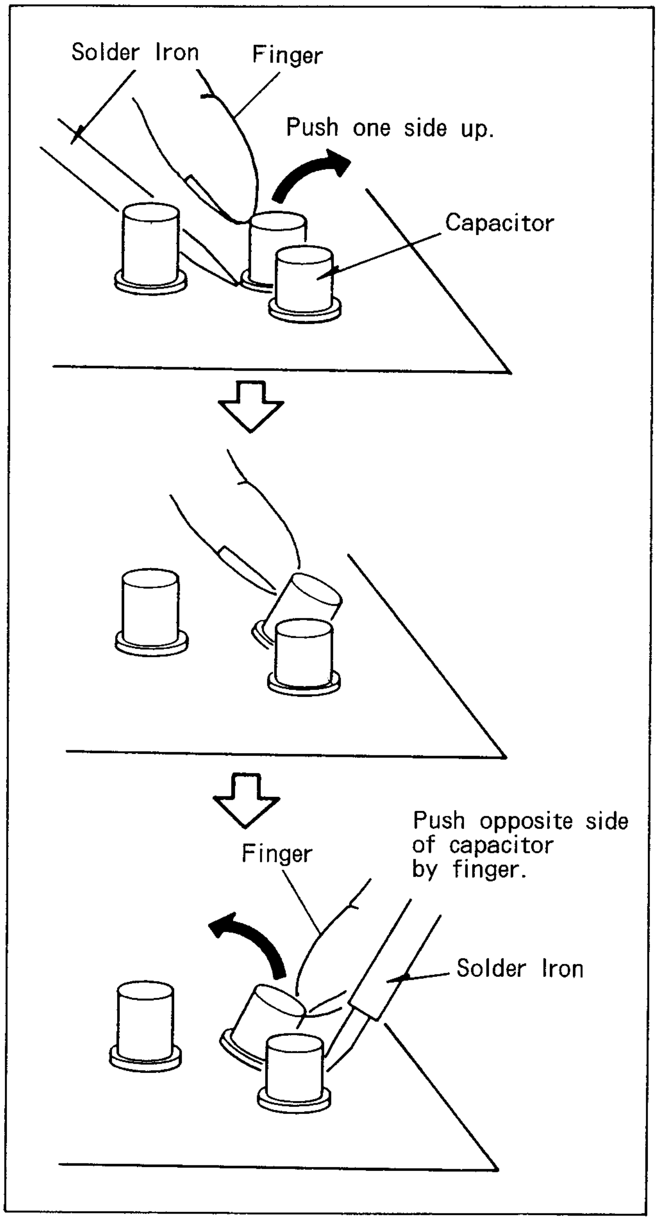

Solder Iron
Finger
Push one side up.
Capacitor
Finger
Push opposite side of capacitor by finger.
Solder Iron

Fig. T10

5. How To Eject Manually

(1) In case that Tape is fully unloaded.

* Push the Eject Button.
* Remove the cassette cover and push the "A" Position as shown in Fig. T11.

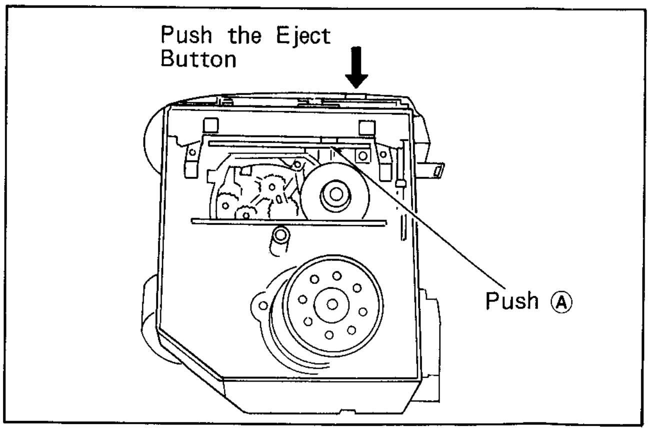

Push the Eject Button
Push Ⓐ

Fig. T11

(2) In Case that Tape is not rewound completely but mechanism is fully unloaded.

- * Remove the Cassette Cover and side case L,R as shown in Fig. T12, (Please refer to Disassembly Procedures.)
- * Rotate the Capstan Rotor until tape is rewound ampletely.
- * Eject is as procedure (1).

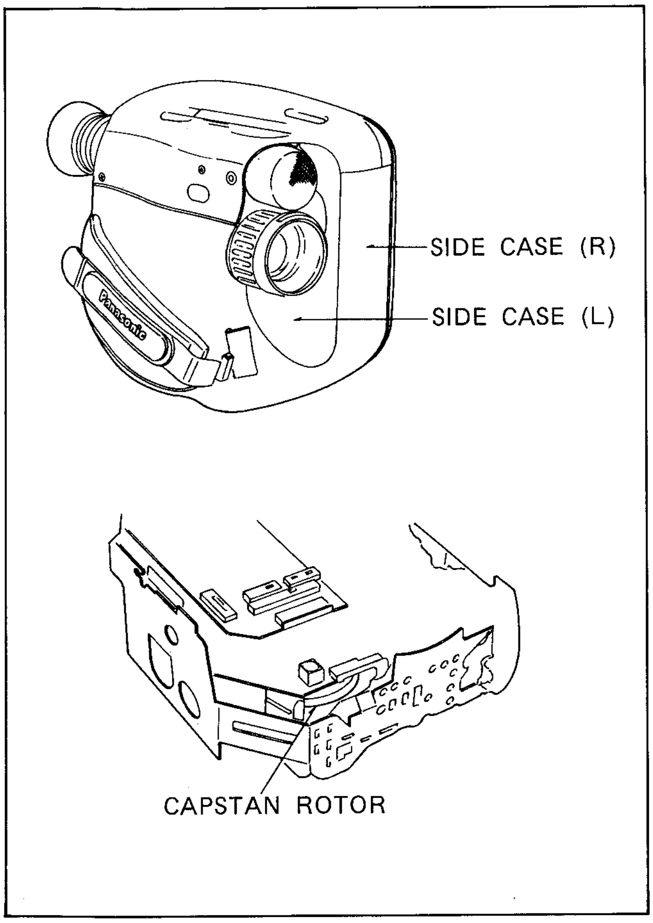

SIDE CASE (R)
SIDE CASE (L)
CAPSTAN ROTOR

Fig. T12

(3) In case that tape and mechanism are still loading condition.

- * Remove the cabinet parts.
- * Remove Oparation C.B.A. and MAIN C.B.A.
- * De–solder the soldering between loading motor and Mechanism flexible C.B.A.
- * Supply DC voltage (3V) to loading motor terminal and make it unloading.

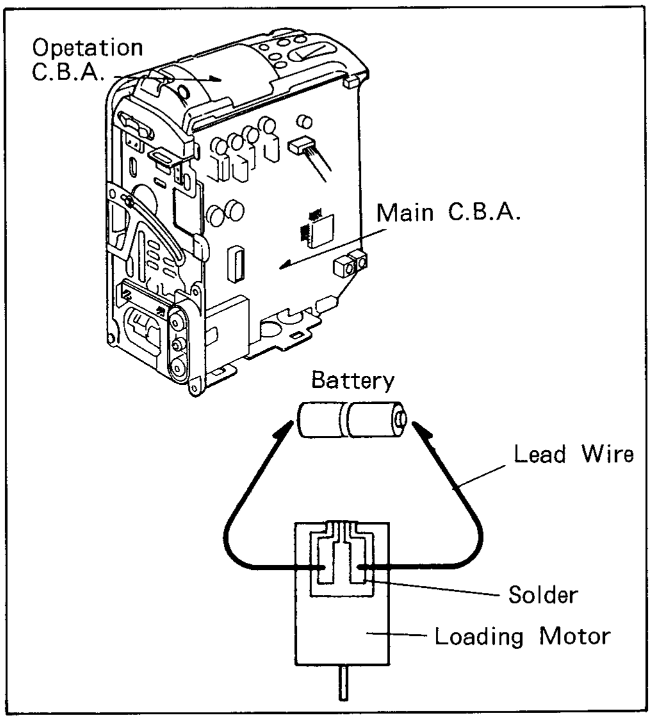

Opetation C.B.A.
Main C.B.A.
Battery
Lead Wire
Solder
Loading Motor

Fig. T13

6. How to use the Camera Holder

- **∗ Camera Holder Arm (VFK0431) [2 pcs]**
- **∗ Camera Holder (VFK0382)**
- **∗ Screw A**
  Screw B

∗ Remove the original screws as shown Fig. ■■ After that install the camera Holder and the camera Holder Arm.

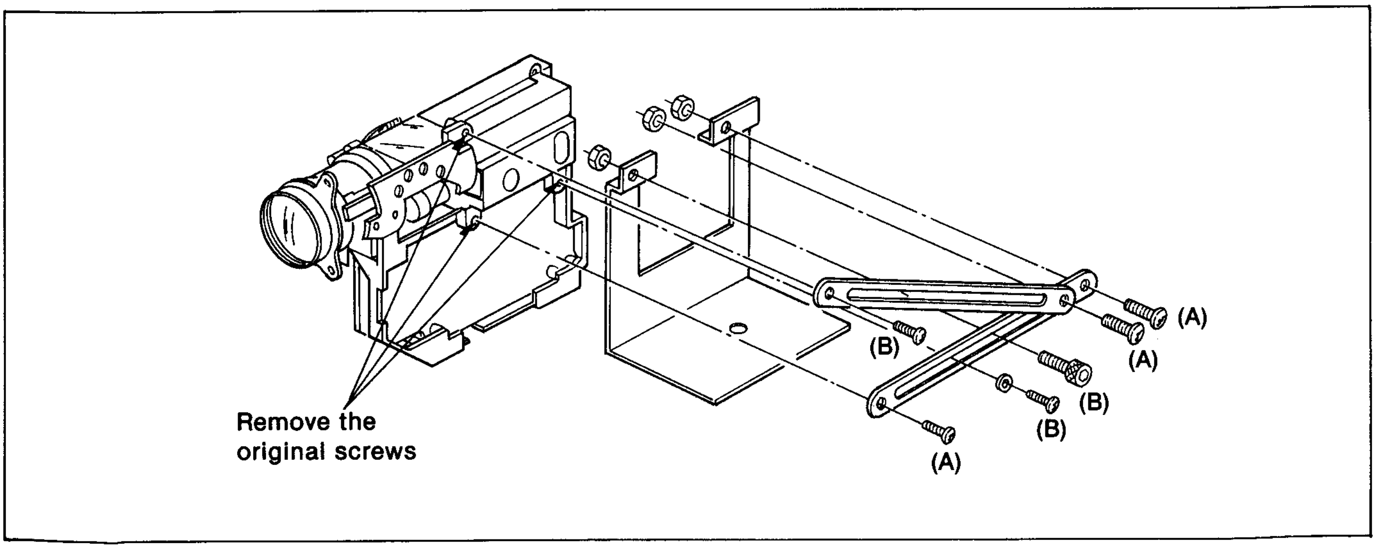
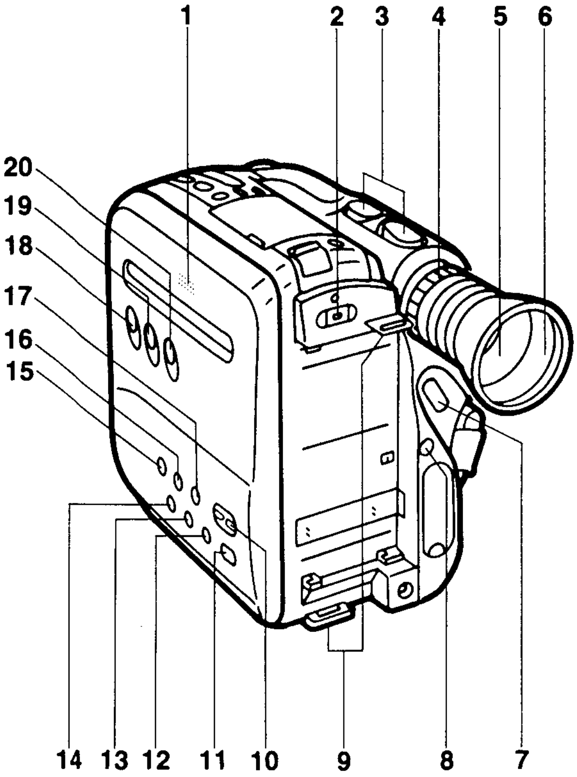

Remove the original screws
(A)
(A)
(A)
(B)
(B)
(B)

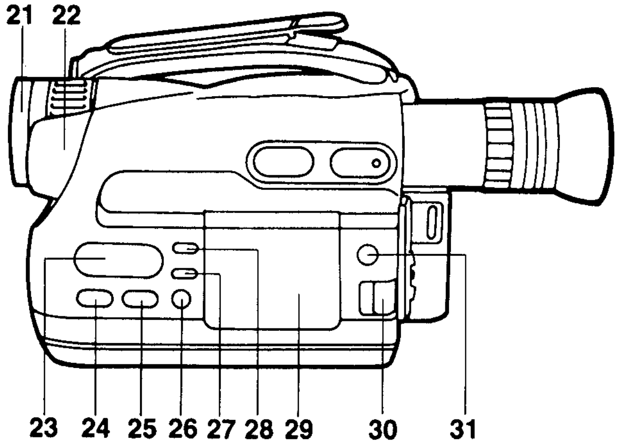
Fig. T14

SECTION 1
GENERAL DESCRIPTIONS

1-1. CONTROLS AND COMPONENTS

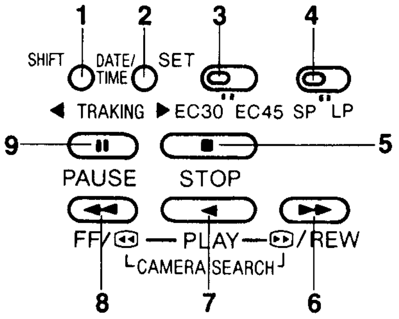

1
2
3
4
5
6
20
19
18
17
16
15
14
13
12
11
10
9
8
7

1 Cassette Compartment
2 Operation Selector Switch
3 Power Zoom Control Buttons
4 Eyepiece Corrector Control
5 Electronic Viewfinder
6 Eyecup
7 Recording Start/Stop Button
8 Battery Eject Button
9 Shoulder Strap Holder
10 Focus +/− Buttons
11 Still/Strobe Button
12 Memory Button
13 Title Color Selector Button
14 Titling Mode Selector Button
15 High Speed Shutter Button
16 White Balance Button
17 Focus Button
18 Title Function On/Off Button
19 EIS Button
20 Fade Button

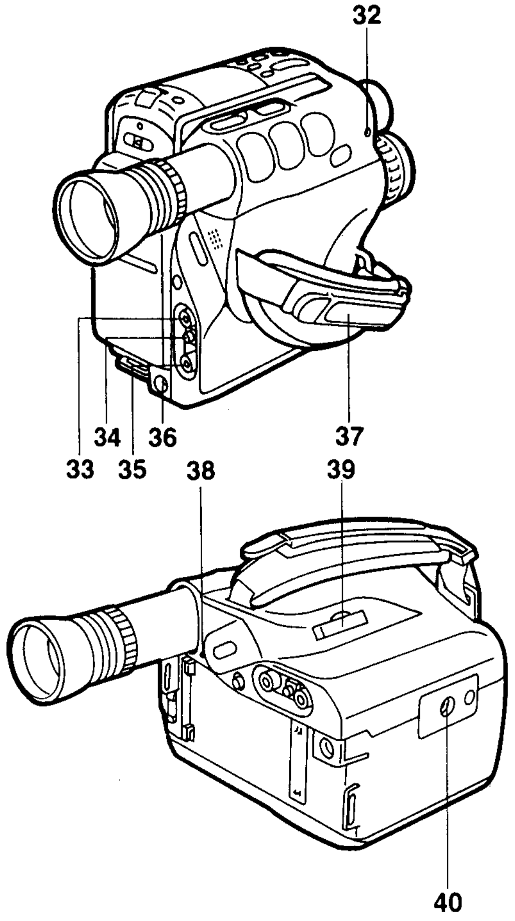

21
22
23
24
25
26
27
28
29
30
31

21 Zoom Lens
22 Microphone
23 LCD Display
24 On Screen Display Button
25 Date/Time Selector
26 Rec Review Button
27 Display Selector Button
28 Reset Button
29 General Operation Control
30 Eject Button
31 One Shot Still Button

29 General Operation Controls


1
2
3
4
SHIFT
DATE/TIME
SET
◀ TRAKING ▶
EC30
EC45
SP
LP
9
5
PAUSE
STOP
FF/⏪ — PLAY — ⏩/REW
CAMERA SEARCH
8
7
6

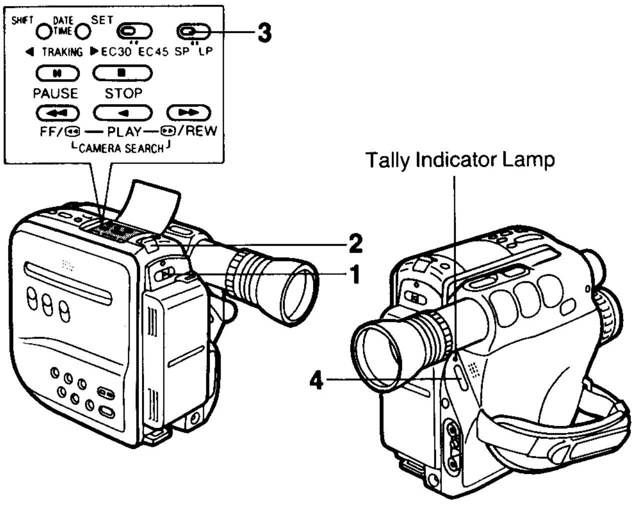
1 Tracking/Date/Time Shift Button
2 Tracking/Date/Time Set Button
3 Tape Selector Switch
4 Recording Speed Selector
5 Stop Button
6 Rewind/Review Button
7 Play Button
8 Fast Forward/Cue Button
9 Pause Button


32
34
36
37
33
35
38
39
40

32	External Microphone Socket
33	Video Output Socket
34	RF DC Output Socket
35	Audio Output Socket
36	DC Input Socket
37	Grip Belt
38	Tally Indicator
39	Button Battery Holder
40	Tripod Receptacle

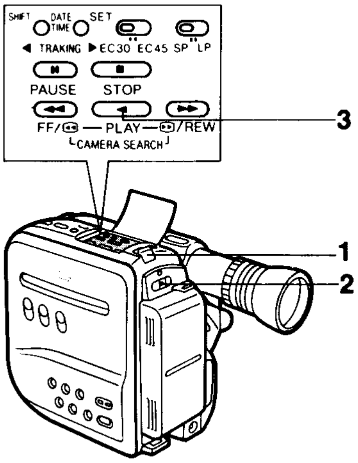
1-2. EASY OPERATIONS

Camera Recording


SHIFT
DATE TIME
SET
◀ TRAKING ▶
EC30 EC45
SP LP
PAUSE
STOP
FF/ — PLAY — /REW
CAMERA SEARCH
3
Tally Indicator Lamp
2
1
4

1. Press the centre part of the Operation Switch and slide it to the "CAMERA" position.
2. Insert a Video Cassette.
3. Set the Recording Speed Selector to "SP" or "LP".
4. Press the Start/Stop Button.
   - Recording starts.
   - Press this button again to stop recording.
   - The Tally Indicator Lamp lights up.

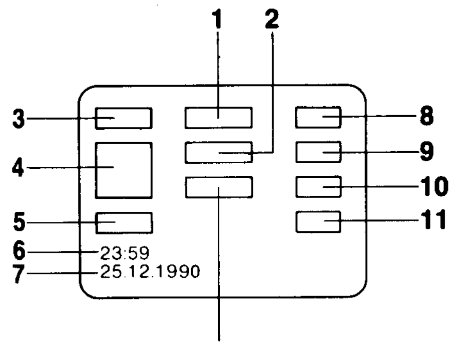
Playback


SHIFT
DATE TIME
SET
◀ TRAKING ▶
EC30 EC45
SP LP
PAUSE
STOP
FF/ — PLAY — /REW
CAMERA SEARCH
3
1
2

1. Insert the recorded cassette.
2. Press the centre part of the Operation Switch and slide it to the "VTR" position.
3. Press the Play Button.
   - Playback starts.
   - Press the Stop Button to stop playback.

1-3. INDICATIONS IN THE ELECTRONIC VIEWFINDER (EVF)

The following indications are displayed in the Electronic Viewfinder (EVF) to inform you of the conditions of the Movie Camera.



Warning/Alarm Indications

1 **Remaining Battery Power/Index Indication**

E--F	The "▬" indications begin to disappear from right to left as the power of the Battery Pack weakens.
INDEX	This indication flashes when a recording is started and it indicates that an index signal is being recorded.

2 **Counter Indication**

M0501	Tape Counter with Memory Indication

3 **Tape Remaining Indication**

4 **Digital Memory Indication**

WHT	Colour Indication
WIPE ↑	Mode Indication (No indication in normal mode.)

5 ((✋)) Electronic Image Stabilizer Indication

6 **Time Indication**

7 **Date Indication**

8 **Tape Running Indications**

REC	Recording mode
PAUSE	Recording Pause mode, Rec Review
▷	Play mode, Camera Search (In forward direction)
▮▮	Still mode
▷▷	Fast Froward/Cue mode
◁◁	Rewind/Review mode, Camera Search (In reverse direction)

9 **Manual White Balance Indication**

WHITE	Manual Mode, Not adjusted
W.SET	Manual Mode, Hold Mode

10 **Recording Mode Indications**

SP	SP mode
LP	LP mode

11 **High Speed Shutter Mode Indications**

1/120	1/120 sec.
1/250	1/250 sec.
1/500	1/500 sec.
1/1000	1/1000 sec.
1/2000	1/2000 sec.
1/4000	1/4000 sec.

Focus Mode Indication

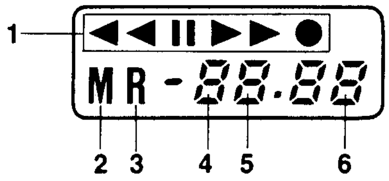
MF	MF Mode

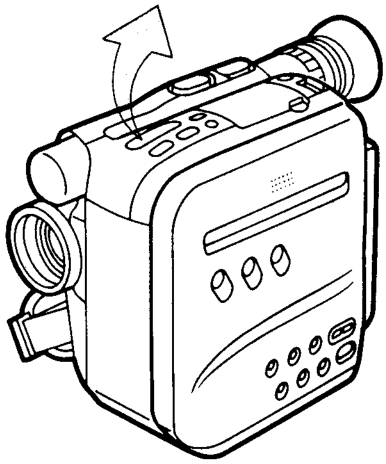
- Some of the above indications may light up alternately at the same place in the EVF to indicate the corresponding operating condition or warnings.

Warning/Alarm Indications

BATT	There is little battery power left. Movie Camera will be turned off in a few minutes. Replace the battery pack by a fully recharged one.
TAPE	It is impossible to record because the erasure prevention tab of the cassette is not intact.
END	During recording, the tape has almost reached its end. Replace the tape with a new one. The indication will remain lit when the tape has reached its end.
DEW	When condensation has formed inside the Movie Camera, the "DEW" indication will flash and a few seconds later, the unit itself off.
⊗	Video Head Clogging (see page 40.)
BACKUP	When the Battery for Title Memory and Auto Date is not inserted, the indication will flash for 10 seconds after the Movie Camera is turned on.

1-4. INDICATION IN THE LCD DISPLAY





1 **Tape Running Indications**

◀ ●:	Recording mode
▮▮ ●:	Recording Pause mode
◀◀:	Fast Forward/Cue mode
▶▶:	Rewind/Review mode, Camera Search (in reverse direction)
◀:	Play mode, Camera Search (in forward direction)
▮▮:	Still mode

2 **Memory Indication**

M 00·00

3 **Tape Remaining Indication**

R 10

4 **Remaining Battery Power Indication**

b : A few minutes after the "b" Indicator begins to flash, the power will be turned off.

5 **Tape Counter Indication**

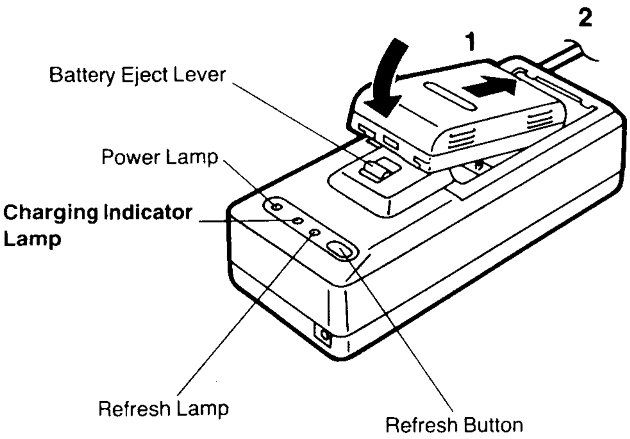
00.00

6 **Dew Indication**

(d)

1-5. BATTERY PACK

Charging



1 Attach the Battery Pack.

2 Connect the AC Adaptor to the Mains.

- **Charging Indicator Lamp**
  Lights while charging is taking place and goes out when charging is finished.

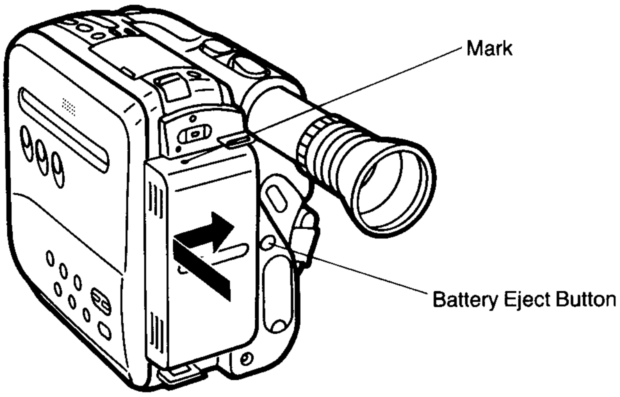
Note:
- The charging takes about 60 minutes.
- The Movie Camera can be used continuously for approx. 50 minutes with a fully charged Battery Pack.
- With the VW-VBS2E Battery Pack (optional), the charging as well as possible recording time is twice as long as for the standard supplied Battery Pack.

■ When the charging is completed, slide the Battery Eject Lever in the direction of the arrow and remove the Battery Pack.

■ **Refreshing function**

The Battery Pack can be recharged for repeated use. However, if it is recharged repeatedly while there is still some charge left, its charging capacity will be gradually reduced. Therefore, if you often need to recharge semi-discharged Battery Packs, attach the Battery Pack to the AC Adaptor, connect the AC Adaptor Mains, and press the Refresh Button to completely discharge the Battery Pack. (The Refresh Lamp will light up, and when the discharging is finished, the Charging Indicator Lamp will light up instead.) This will increase the charging capacity and extend the operating life of the Battery Pack. Therefore, if the operating life of the Battery Pack becomes noticeably shorter, refresh it. (It is recommended to refresh the Battery Pack approx. once every five rechargings.)

Attaching

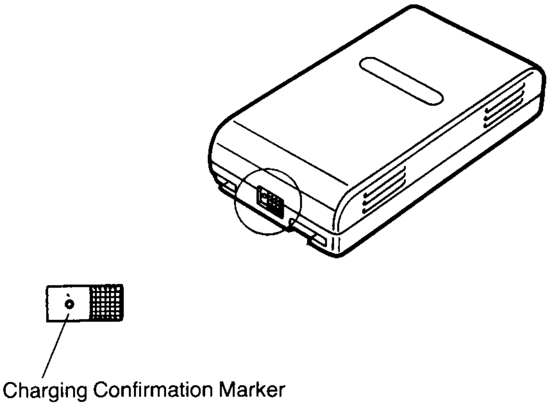


1 Align the grooves of the Battery Pack and the Movie Camera.

2 Insert the Battery Pack until it locks with a click.
- To remove the Battery Pack, press the Battery Eject Button and slide the Battery Pack in the opposite direction of that in operation step 2.

Caution:
- Wait about 10 seconds after turning the Movie Camera off, before removing the Battery Pack.
- If the Battery Pack is removed during recording or playback, the tape remains wound around the video head cylinder and could become damaged.

Charging Confirmation Marker on the Battery Pack

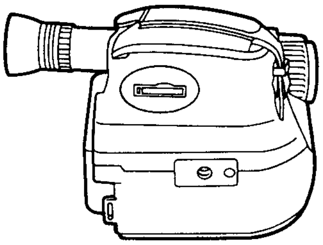


This marker makes it convenient to distinguish between charged and discharged Battery Packs. For example, visible dot means charged Battery Pack, and not dot means discharged Battery Pack.

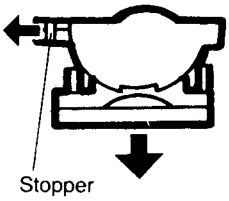
1-6. SETING THE CLOCK

How to Insert the Battery for the Clock Operation

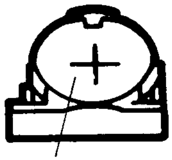
The "CR2032" size battery is necessary for the Date, Time and input titles to be retained in the Movie Camera's memory when it is turned off.



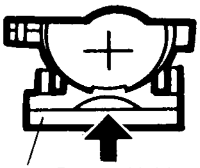
1



2



3



1 Use a small screw driver or similar tool to push the Stopper to the left to release the Battery Holder, and then pull it out completely.

2 Place the "CR2032" size battery on the Battery Holder with (+) mark facing upward.

3 Reinsert the Battery Holder into the Movie Camera.

Note:

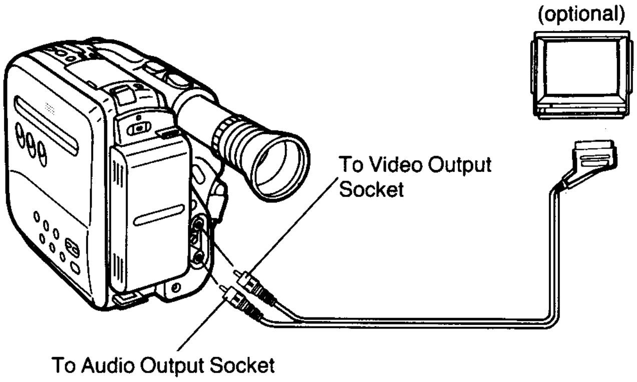
- This battery is necessary for the Date & Time, Title and White Balance modes to be memorized by the Movie Camera.
- If the battery is not inserted or if it is exhausted, the indication "BACKUP" in the EVF will flash for approximately 10 seconds when turning the Movie Camera on.
- When replacing the battery while the Time & Date Indications are still correct, connect the Movie Camera to the AC Adaptor for the duration of the battery replacement so that the time will remain unchanged.

CAUTION FOR BATTERY REPLACEMENT

- The life of the battery is about one year. Inspect and if necessary, replace the Battery once a year.
- Load the new battery with its polarities (+ and −) aligned correctly.
- Remove spent battery immediately and dispose of it.
- Do not try to short-circuit, recharge or heat the battery and do not throw it into a fire.

1-7. PLAYBACK VIA TV SET (CONNECTIONS)

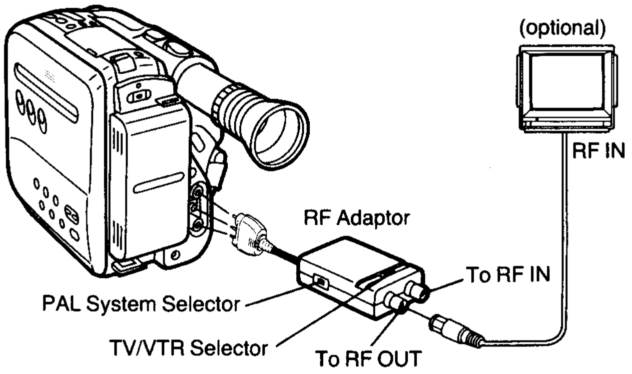
TV Set with AV Input



Playback on a table Type VTR

Use the Cassette Adaptor.

TV Set without AV Socket



TV
Tune to UHF channel 36.

TV/VTR Selector on the RF Adaptor
VTR: For playing back a cassette
TV: For watching TV.

PAL System Selector
G: For continental Europe
I: For U.K.

1-8. ACCESSORIES

Standard Accessories

- AC Adaptor
- Battery Pack
- Cassette Adaptor
- Shoulder Strap
- AV Output Cable
- DC Input Cable
- Battery for Cassette Adaptor Operation
- Battery for Clock Operation

2-1. DISASSEMBLY PROCEDURES

2-1-1. DISASSEMBLY FLOW CHART

The following flowchart describes the order or steps for removing cabinet parts and certain printed circuit boards in order to make access to the items needing service.
To reassemble the unit, follw the steps in reverse order.

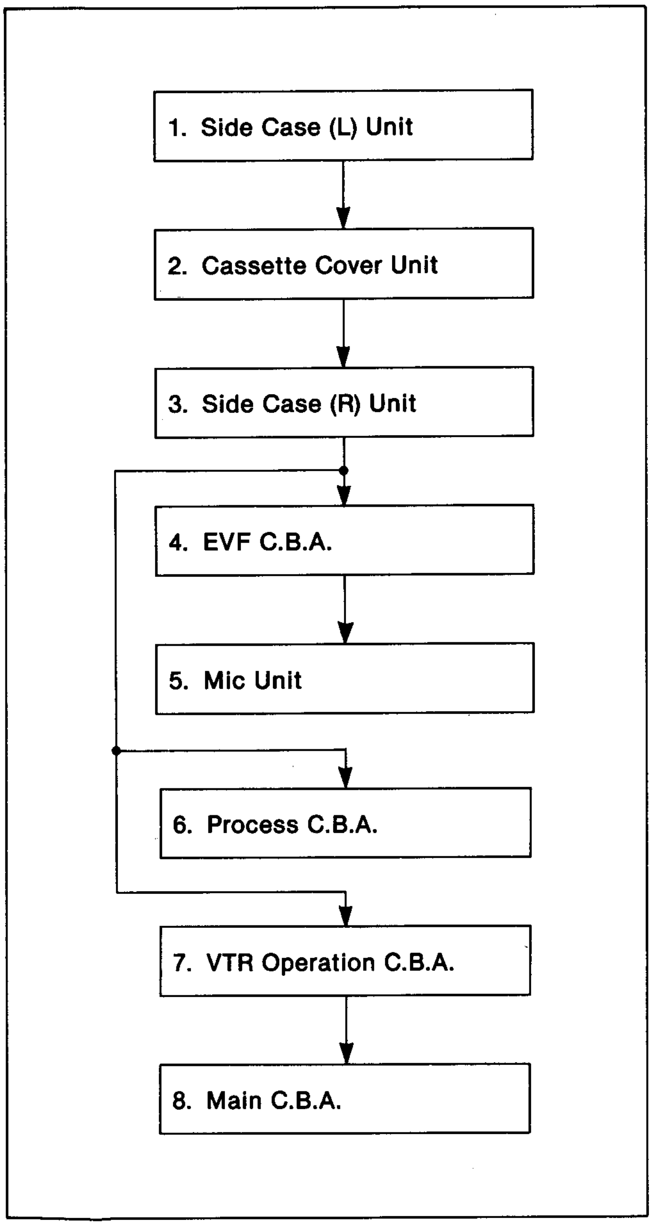
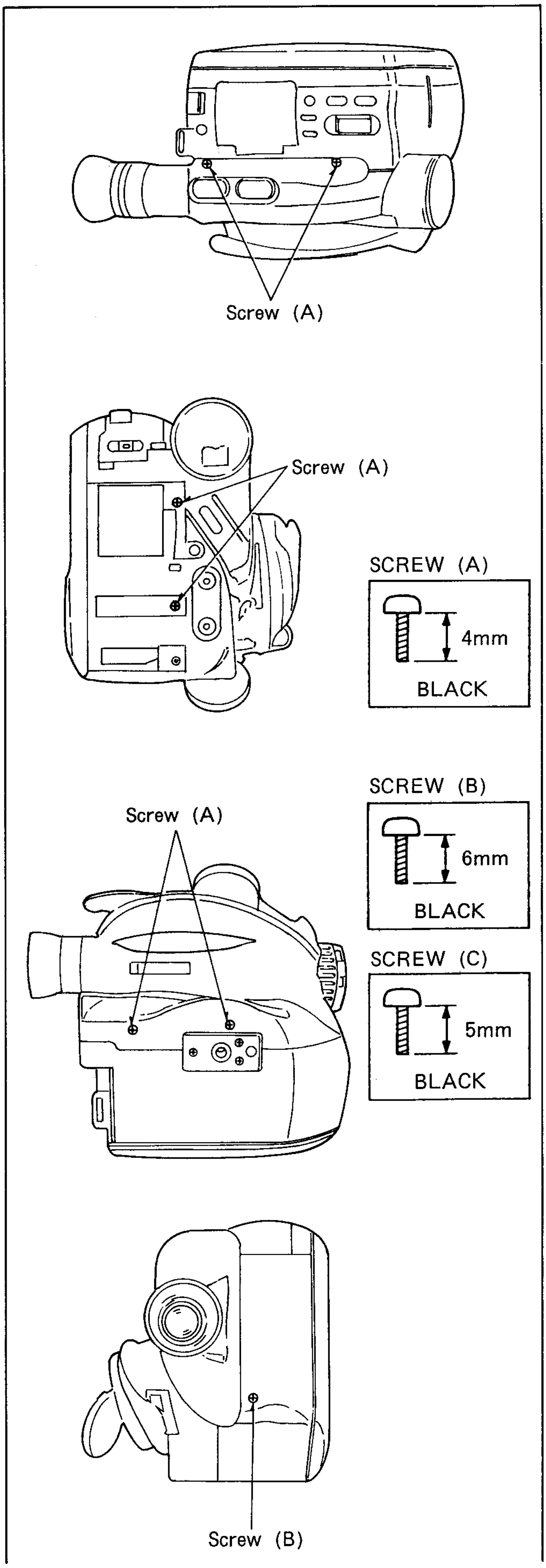

1. Side Case (L) Unit
2. Cassette Cover Unit
3. Side Case (R) Unit
4. EVF C.B.A.
5. Mic Unit
6. Process C.B.A.
7. VTR Operation C.B.A.
8. Main C.B.A.

Fig. D1

2-1-2. DETAILED DISASSEMBLY METHOD

1. Remove ..... Side case (L) unit

(1) Remove ..... 9 screws


Screw (A)
Screw (A)
SCREW (A)
4mm
BLACK
SCREW (B)
6mm
BLACK
Screw (A)
SCREW (C)
5mm
BLACK
Screw (B)

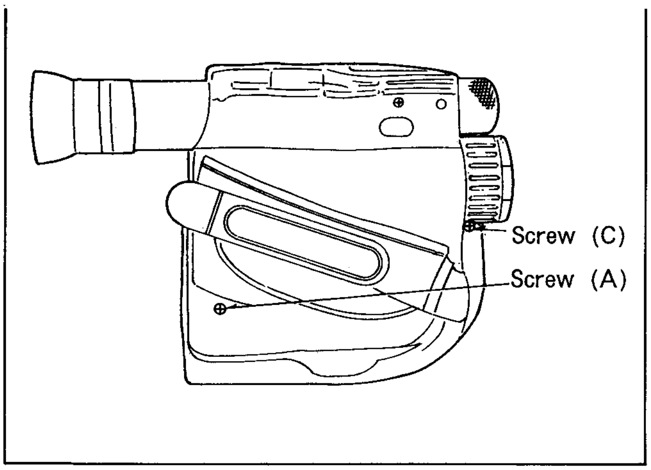

Screw (C)
Screw (A)

Fig. D2

(2) Remove the Lens Cover
(Lens cover has Locking Tub, Therefore turn the Lens cover to Light so that Remove Locking Tub).
(3) Remove the Lens cover Ring.
(4) Remove the Side case.

2. Remove the cassette cover

(1) Remove ..... 2 Screws
(2) Disconnect the FP301

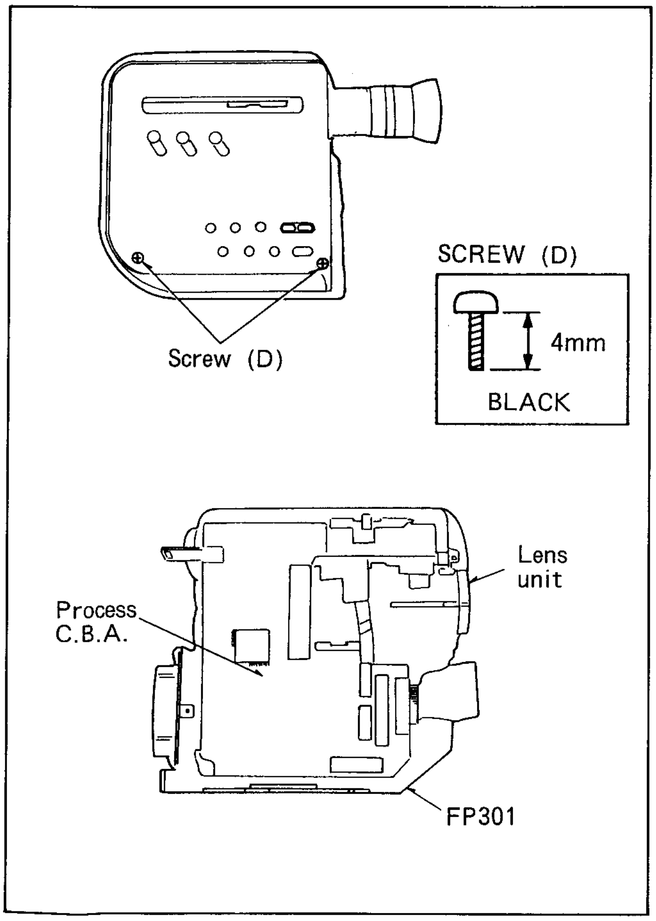

SCREW (D)
4mm
BLACK
Screw (D)
Lens unit
Process C.B.A.
FP301

Fig. D3

(3) Remove ..... Cassette Cover unit

3. Remove the Side case (R) unit.

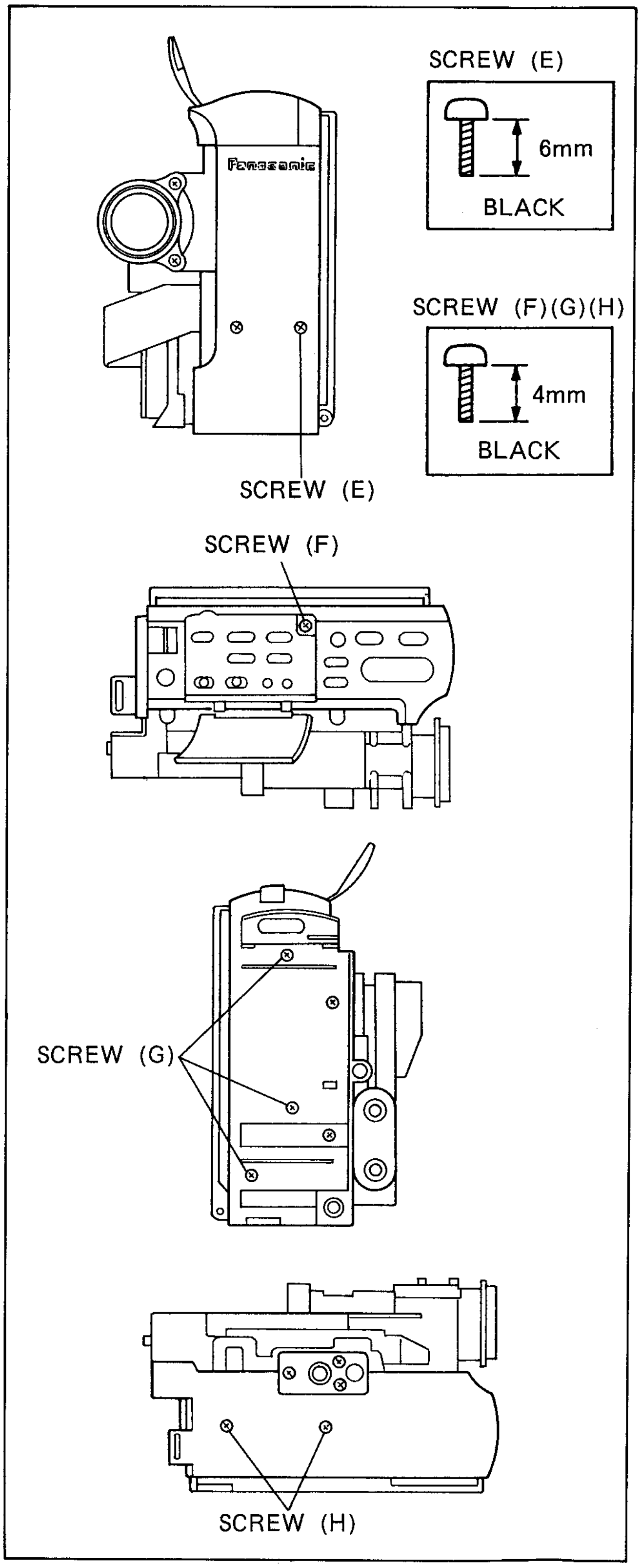

SCREW (E)
6mm
BLACK
SCREW (F)(G)(H)
4mm
BLACK
Panasonic
SCREW (E)
SCREW (F)
SCREW (G)
SCREW (H)

Fig. D4

(1) Remove ..... 7 Screw
(2) Remove ..... Side cause (R)

4. E.V.F C.B.A AND MIC UNIT

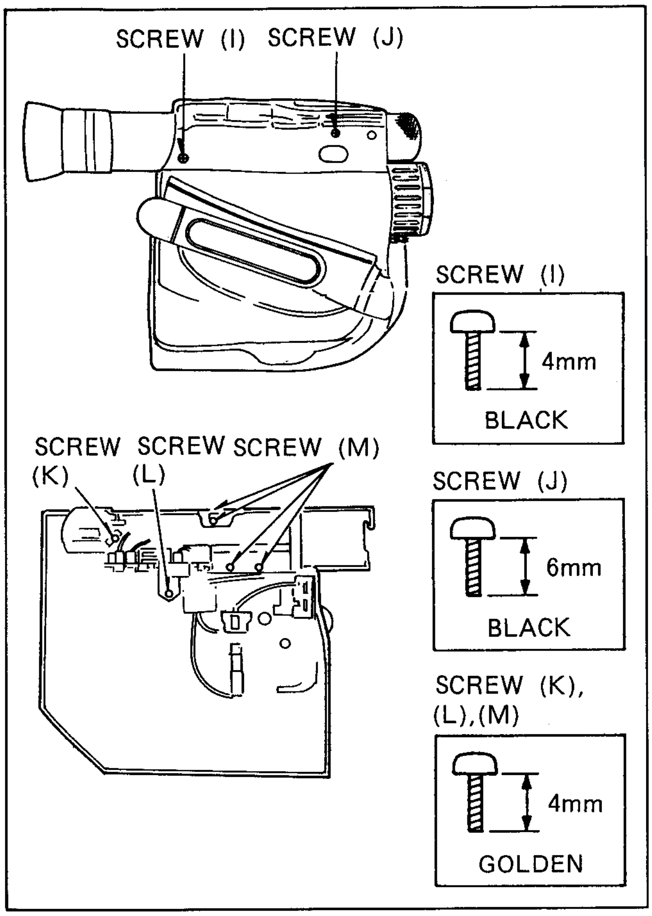

SCREW (I)
SCREW (J)
SCREW (I)
4mm
BLACK
SCREW (K)
SCREW (L)
SCREW (M)
SCREW (J)
6mm
BLACK
SCREW (K), (L),(M)
4mm
GOLDEN

Fig. D5

(1) Remove ..... 2 screws (I),(J).
(2) Remove ..... EVF cover.
(3) Remove ..... 6 screws.
(4) Remove ..... EVF unit.
(5) Remove ..... Mic unit.

6. Process C.B.A.

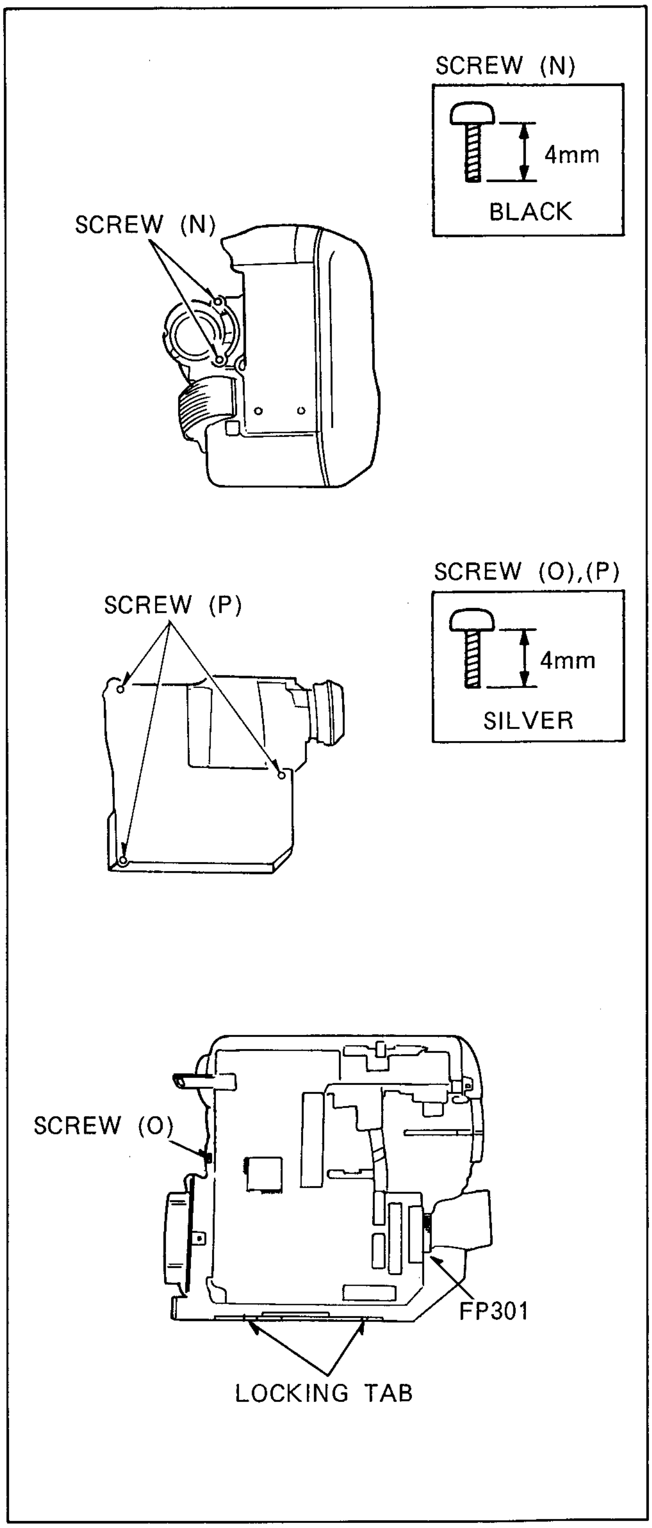

SCREW (N)
4mm
BLACK
SCREW (N)
SCREW (O),(P)
4mm
SILVER
SCREW (P)
SCREW (O)
FP301
LOCKING TAB

Fig. D6

(1) Remove .... 3 Screws (screw(n) and (O)).
(2) Disconnect ..... flexible cable from FP301.
(3) Take out .... Locking Tab.
(4) Remove .... camera unit.
(5) Remove .... 3 Screws (screw(P)).
(6) Remove .... Connector B301 B302.

7. VTR OPERATION C.B.A.

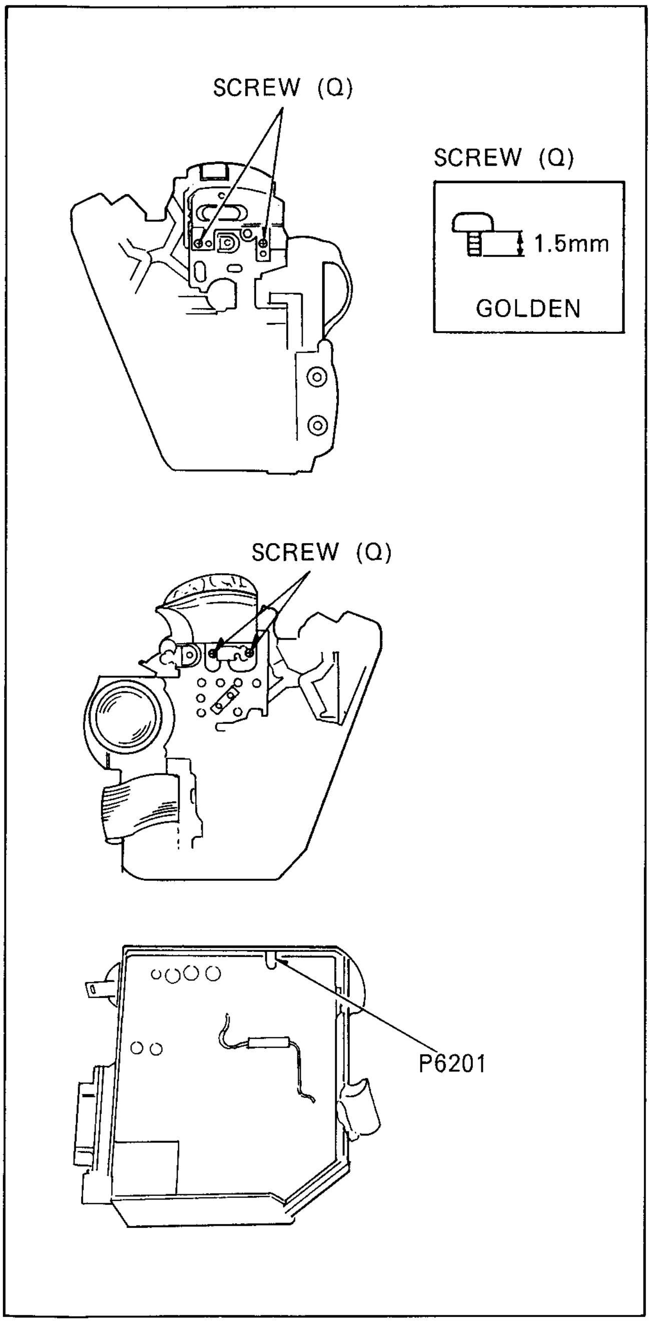

SCREW (Q)
SCREW (Q)
1.5mm
GOLDEN
SCREW (Q)
P6201

Fig. D7

(1) Remove ..... 4 Screws.
(2) Remove ..... Connector P6201.

8. MAIN C.B.A.

(1) Remove ..... 3 Screws.
(2) Remove ..... Connector P2001, P6001, P4002

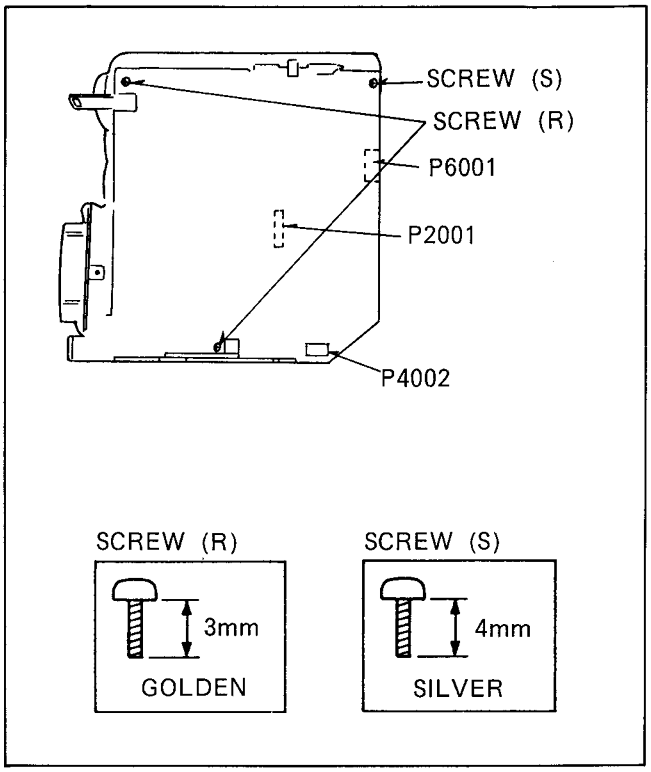

SCREW (S)
SCREW (R)
P6001
P2001
P4002
SCREW (R)
3mm
GOLDEN
SCREW (S)
4mm
SILVER

Fig. D8

9. MECHANISM FLEXIBLE C.B.A. and DRIVE C.B.A.

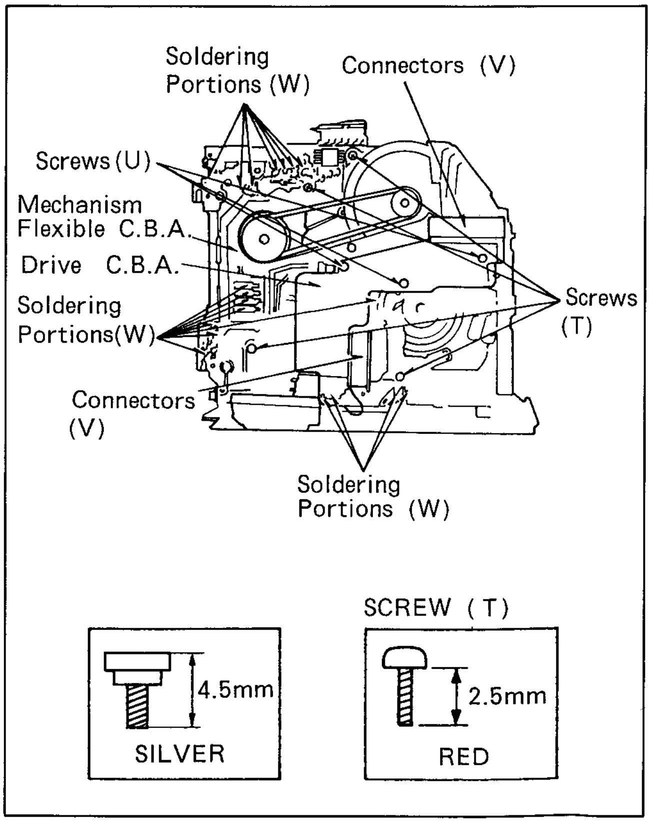

Soldering Portions (W)
Connectors (V)
Screws (U)
Mechanism Flexible C.B.A.
Drive C.B.A.
Soldering Portions(W)
Screws (T)
Connectors (V)
Soldering Portions (W)
SCREW (T)
4.5mm
SILVER
2.5mm
RED

Fig. D9

(1) Remove ..... 7 screws (T,U)
connector (V)
(2) Resolder ... 18 soldering portions (W)

2-2. REPLACEMENT OF THE CYLINDER UNIT

2-2-1. REPLACEMENT OF THE UPPER CYLINDER UNIT

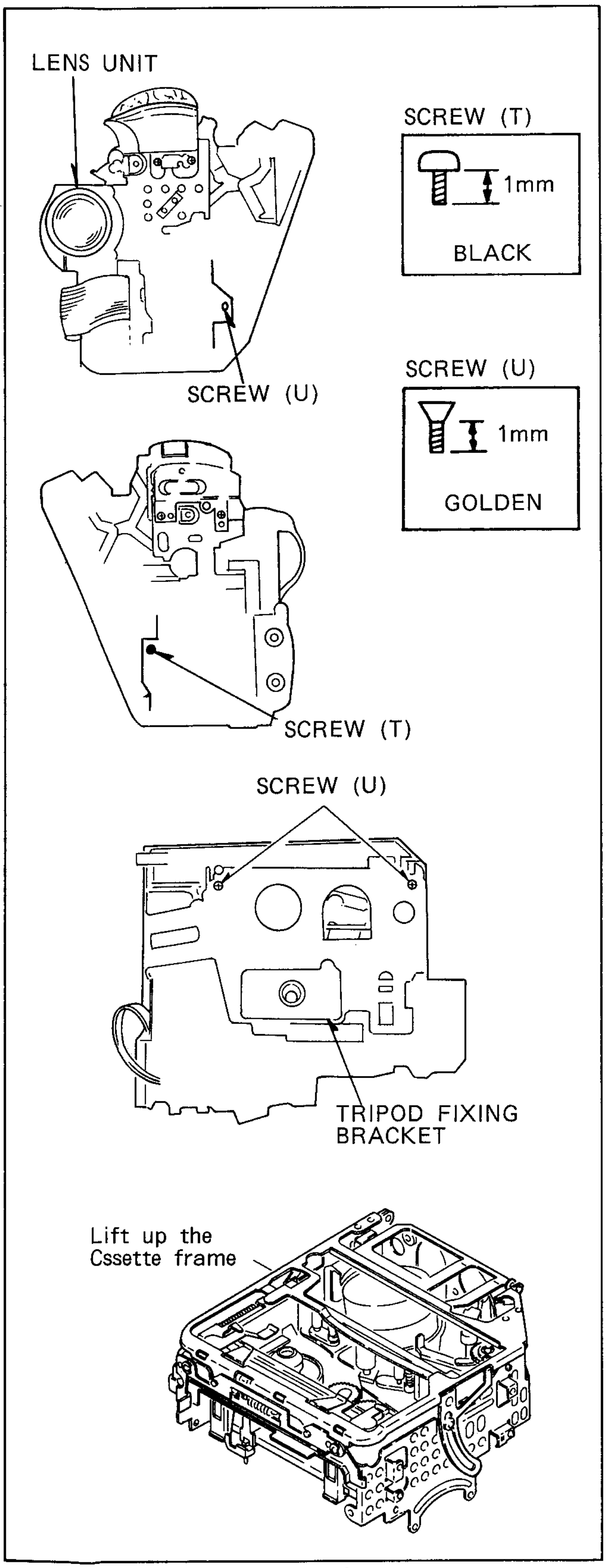

LENS UNIT
SCREW (T)
1mm
BLACK
SCREW (U)
SCREW (U)
1mm
GOLDEN
SCREW (T)
SCREW (U)
TRIPOD FIXING BRACKET
Lift up the Cssette frame

Fig. D10

(1) Preparation ..... Removal of Cassette Frame.

1. Remove ..... 4 Screws (Screw (X),(Z)).
2. Remove ..... Lift up the cassette frame.

(2) Replacement the upper cylinder.

Work with extremely care when removing or replacing the Upper Cylinder Unit.
Do not touch the Video Head during servicing.

1. Remove 2 screws as shown below.
2. Unsolder 18 soldered portions indicated by arrows on the Circuit Board.
3. Remove the Upper Cylinder Unit by lifting it upward.

Note :
Soldered portion can be easily removed by using solder sucking wire, etc.

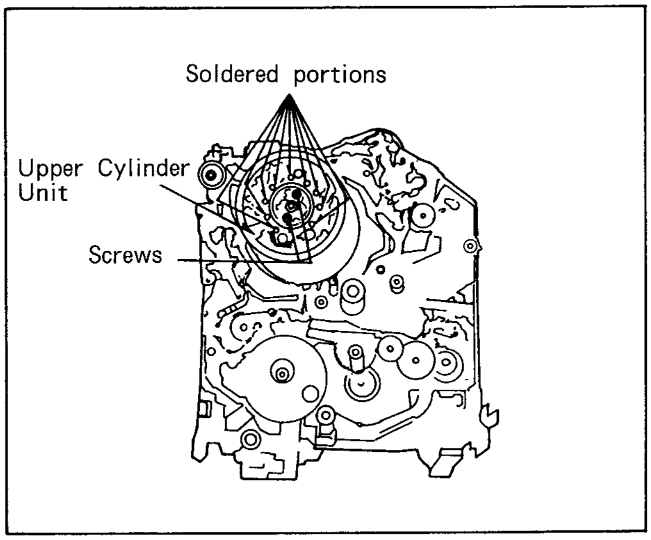

Soldered portions
Upper Cylinder Unit
Screws

Fig. D11

4. The Upper Cylinder Unit can be reinstalled by reversing the removal procedure, however, when the Upper Cylinder is reinstalling, be extremely carefull so that white portion of circuit Board of the Upper Cylinder correctly matches the white portion of the bottom Cylinder.

Note :
1) If the Upper Cylinder Unit is reversely installed, no colour will appear when play back a pre-recorded tape.

2-2-2. REPLACEMENT OF DD CYLINDER UNIT

1. Remvoe the 3 screws and connector.
2. Take out D.D. Cylinder carefully.

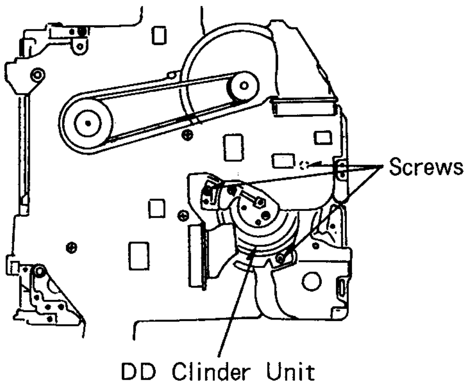

Screws
DD Clinder Unit

Fig. D12

Note :

Since there is very little clearance between the D.D. Cylinder Unit and the chassis, remove the D.D. Cylinder Unit carefully.

3. Reinstall the new D.D. Cylinder Unit, tighten the 3 screws and reconnect the connector.

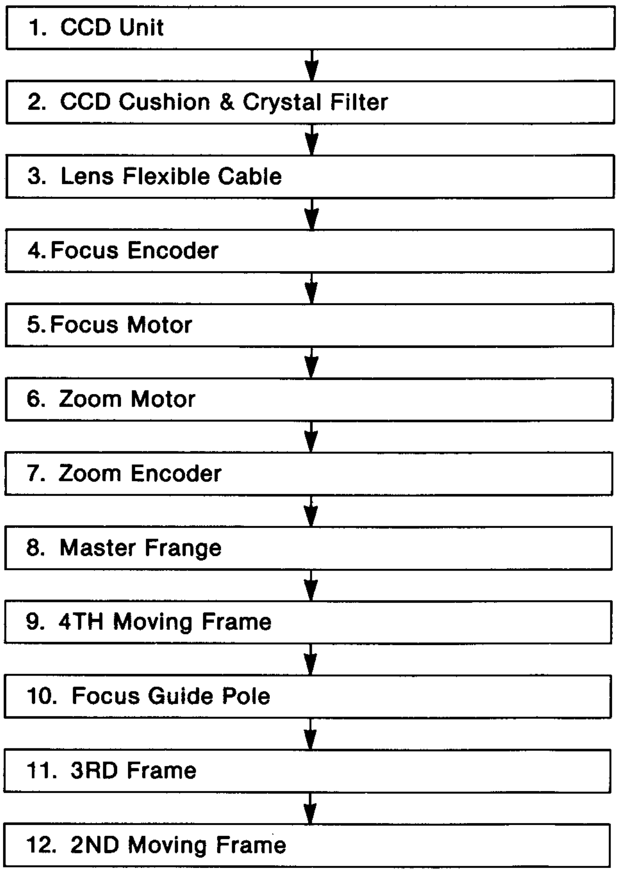
Note :

(1) Gently rub the video head in direction of tape travel with Head cleaning stick.

(2) After replacement, confirm the performance.
If any further maintenance is required, perform "TAPE INTER- CHANGE ABILITY ADJUSTMENT".

2-3. DISASSEMBLY PROCEDURES OF ZOOM MOTOR AND FOCUS MOTOR

The following flowchart describes order or steps for removing the Lens units and certain printed circuit boards in order to make access to the items needing service.
To reassemble the unit follow the steps in reverse order.


1. CCD Unit
2. CCD Cushion & Crystal Filter
3. Lens Flexible Cable
4. Focus Encoder
5. Focus Motor
6. Zoom Motor
7. Zoom Encoder
8. Master Frange
9. 4TH Moving Frame
10. Focus Guide Pole
11. 3RD Frame
12. 2ND Moving Frame

Note:

Each Item numbers are equivalet to numbers on Fig.L2.

Fig. L1

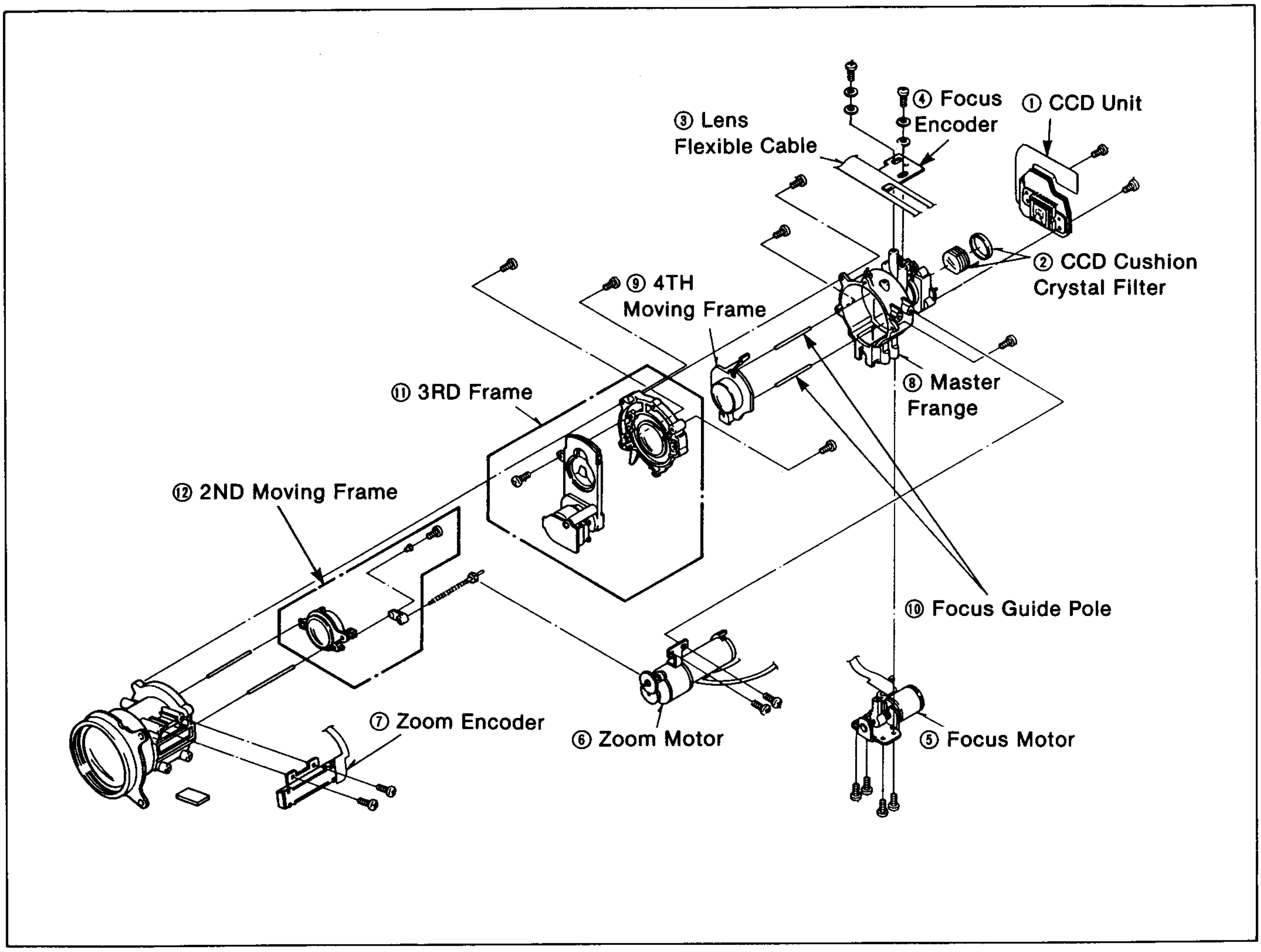

③ Lens
Flexible Cable
④ Focus
Encoder
① CCD Unit
② CCD Cushion
Crystal Filter
⑨ 4TH
Moving Frame
⑪ 3RD Frame
⑧ Master
Frange
⑫ 2ND Moving Frame
⑩ Focus Guide Pole
⑦ Zoom Encoder
⑥ Zoom Motor
⑤ Focus Motor

Fig. L2

2-4. ASSEMBLY ADJUSTMENT PROCEDURES OF MECHANISM

The mechanism of this model is mostly engaged to the system control circuit,through the mode select switch.
Therefore the relation between the mode select switch and cam gear decides all further mechanical movement of the mechanical parts such as levers,gears,rollers and so on. If these parts are fixed improperly,the units will be unloaded or compulsory stopped.
And it will result being damaged at any mechanical or electrical parts.

2-4-1. ASSEMBLY PROCEDURES OF T-RAIL UNIT AND LOCK BASE.

(1). Install a T-Rail Unit and Lock Base Unit as shown in Fig. M1 and M2.

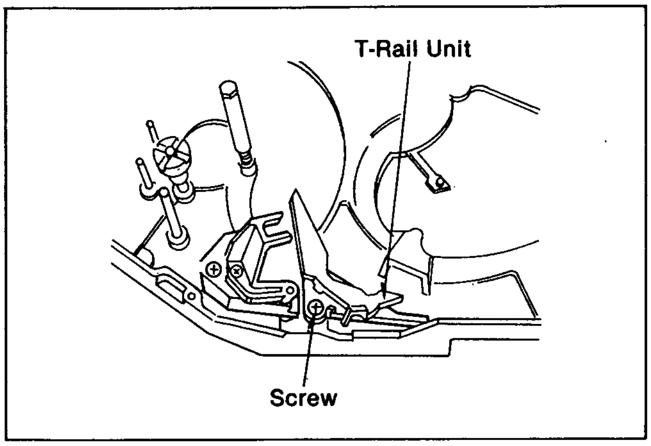

T-Rail Unit
Screw

Fig. M1

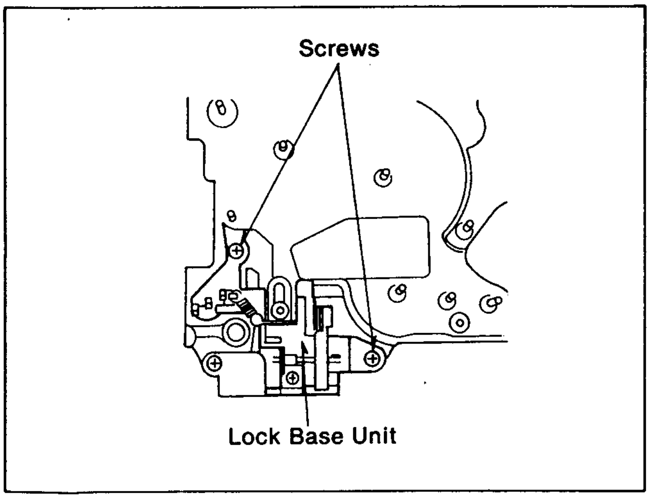

Screws
Lock Base Unit

Fig. M2

2-4-2. ASSEMBLY PROCEDURES OF CAM GEAR AND ZENEBA GEAR

(1). Install a Cam Gear so that phase mark on the Cam Gear,with its point turned up,and then insert the Cut washer as shown in Fig.M3.

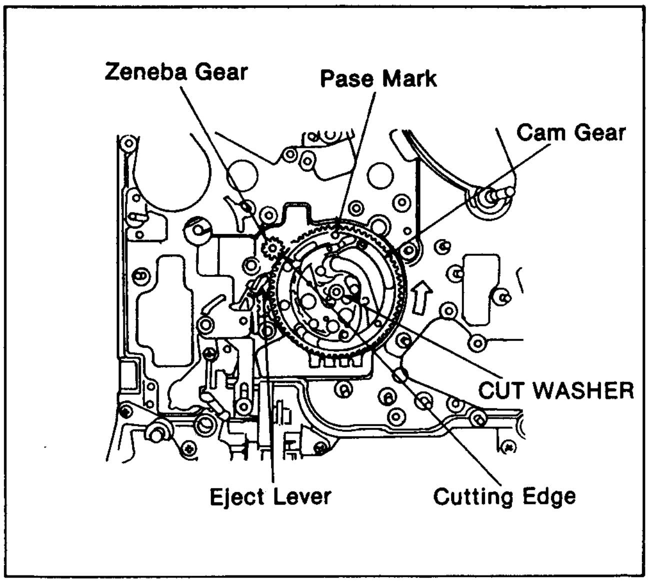

Zeneba Gear
Pase Mark
Cam Gear
CUT WASHER
Eject Lever
Cutting Edge

Fig. M3

NOTE:
If can't install the Cam Gear,Eject Lever caught on the Cam Gear.
The Cam Gear turn to the left for free from the Eject Lever and then install a Cam Gear.

(2). Install the Zeneba Gear so that cutting edge of the Zeneba Gear face to the Cam Gear as shown in Fig.M4.

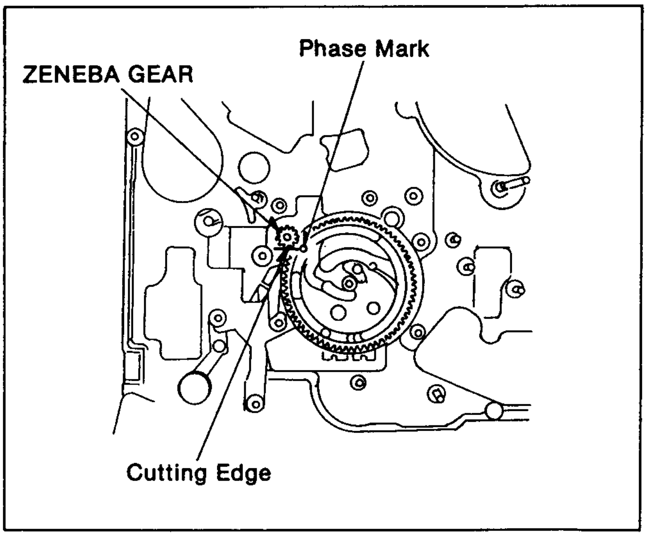

Phase Mark
ZENEBA GEAR
Cutting Edge

Fig. M4

NOTE:
When installation of the these Gears are finished,make sure that phase mark on the Cam on the Cam Gear face to the Zeneba Gear.

2-4-3. ASSEMBLY PROCEDURES OF S-BOARD UNIT AND GEAR

(1). Install the S–Board Unit as shown in Fig.M5.

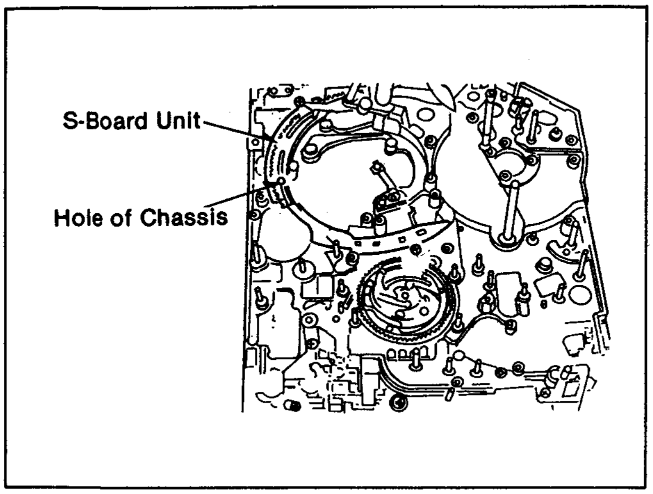

S-Board Unit
Hole of Chassis

Fig. M5

NOTE
1: S–Board Unit contain the S–Rack,S–Rack Guide,S–Shaft Holder Unit and S2 Roller Post unit.

NOTE
2: The hole of S–Rack is exactly in line with the hole of chassis.

(2). Install the Loading Gear–S so that the hole of Loading Gear is exactly in with the hole of metal frame of Loading Gear–S Unit as shown in Fig.M6.

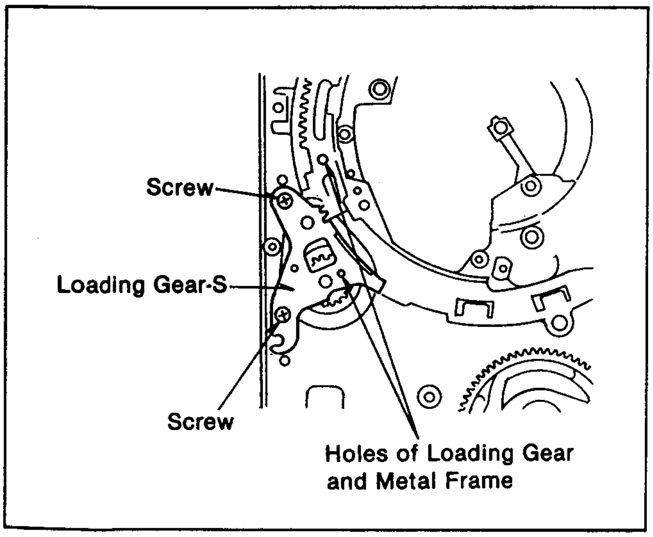

Screw
Loading Gear-S
Screw
Holes of Loading Gear and Metal Frame

Fig. M6

2-4-4. ASSEMBLY PROCEDURES OF T-RACK GUIDE, T-RAIL, LOADING GEAR T2, LOADING GEAR T1, AND LOADING GEAR 5.

(1). Install the T–Rack Guide as shown in Fig.M7.

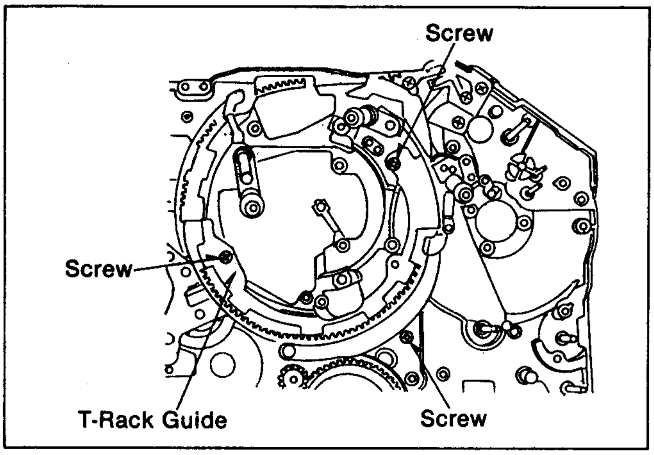

Screw
Screw
T-Rack Guide
Screw

Fig. M7

(2). Install the T–Rail(R) Unit as shown in Fig.M8.

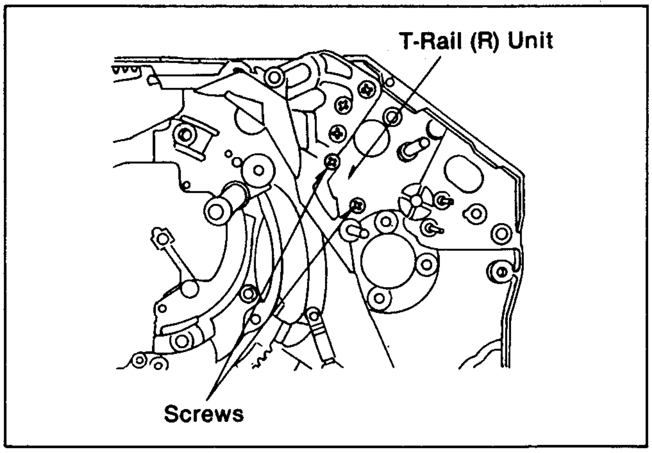

T-Rail (R) Unit
Screws

Fig. M8

(3). The 1st tooth on the T–Rack Guide face to the hole of Guide as shown in Fig.M9.

(Expanded View of Adjustment Portion)

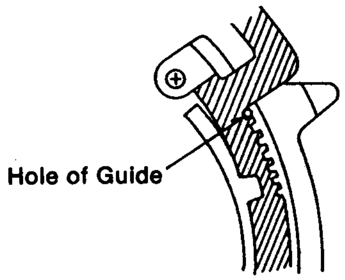

Hole of Guide

Fig. M9

(4). Install the Loading Gear–T2 so that the mark on the the Loading Gear T2 is exactly in line with the mark of Loading Gear S as shown in Fig. M10 and M11.

(5). Install the Loading Gear–T1 so that the mark on the Loading Gear–T1 is exactly in line with the hole of T–Rack Guide.

(6). Install the Loading Gear 5.

(7). Insert the Cut Washer to each Loading Gear when phase of each gears are collect.

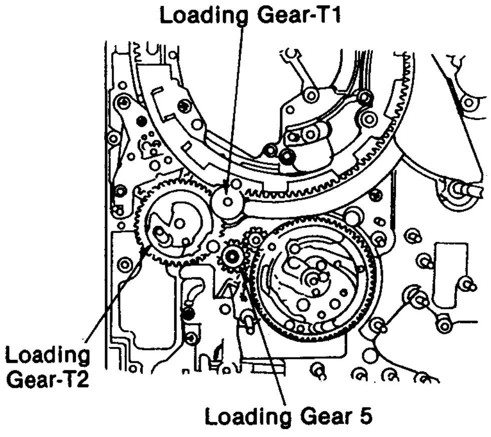

Loading Gear-T1
Loading Gear-T2
Loading Gear 5

Fig. M10

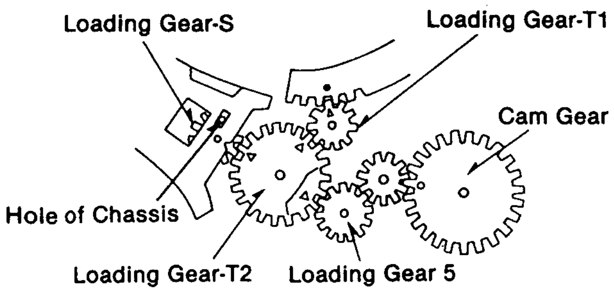

Loading Gear-S
Loading Gear-T1
Cam Gear
Hole of Chassis
Loading Gear-T2
Loading Gear 5

Fig. M11

2-4-5. ASSEMBLY PROCEDURES OF BAND GUIDE AND S-RAIL UNIT.

(1). Install the Band Guide and then insert the Cut Washer as shown in Fig.M12.

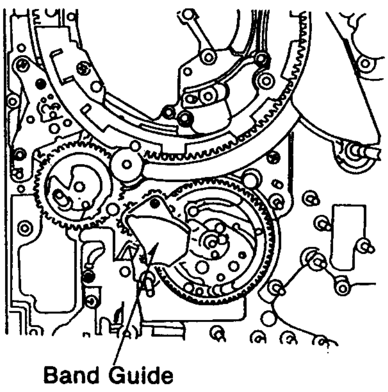


Fig. M12

(2). Install the S–Rail Unit and then tighten the 3–Screws as shown in Fig.M13.

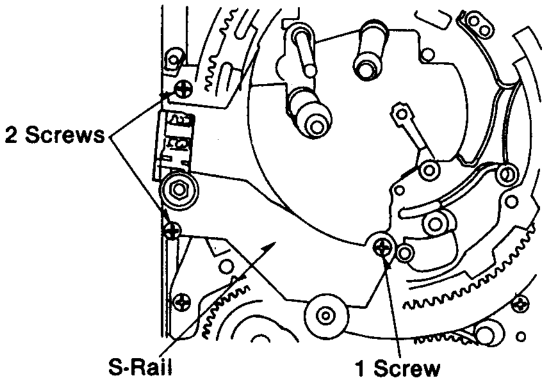

2 Screws
S-Rail
1 Screw

Fig. M13

2-4-6. ASSEMBLY PROCEDURES OF T-RAIL AND S-TV STOPPER.

(1). Install the T–Rail and then tighten the 3–Screws as shown Fig.M14.

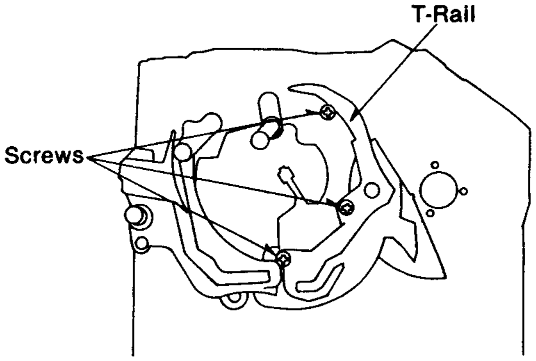

T-Rail
Screws

Fig. M14

(2). When installting of T–Rail finished,turn the Cam Gear to counter–clockwise that set the Roller Posts into stop position as shown in Fig. M15 and M16.

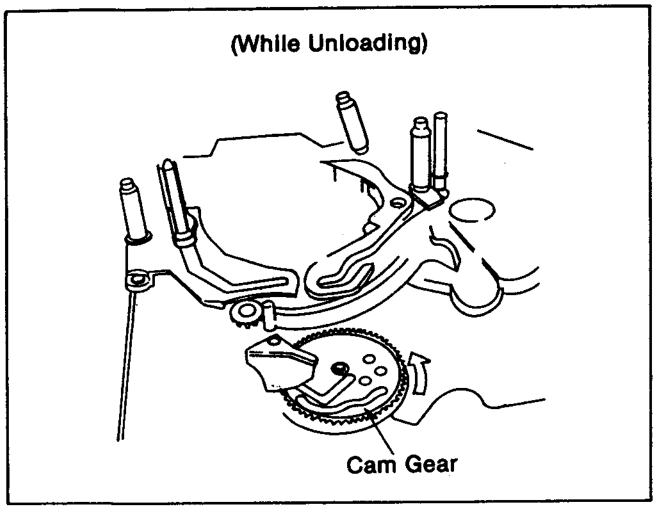

(While Unloading)
Cam Gear

Fig. M15

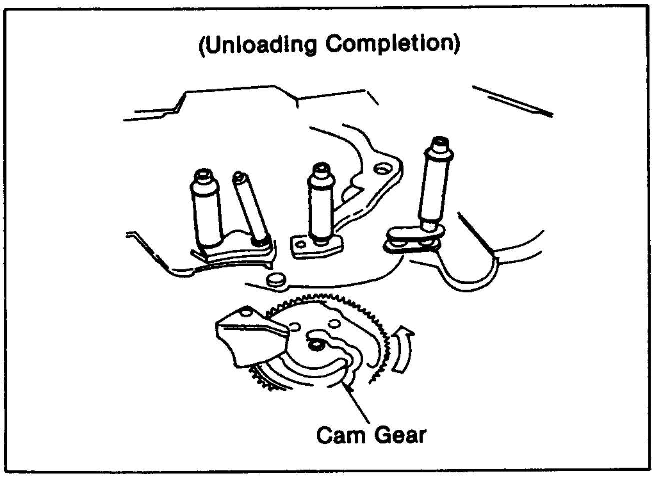

(Unloading Completion)
Cam Gear

Fig. M16

NOTE:
Roller posts is made up of S2 Roller post, T–Roller Post,and Roller Post.

(3). Install the S–TV Stopper and then tighten the 2–Screws as shown in Fig.M17.

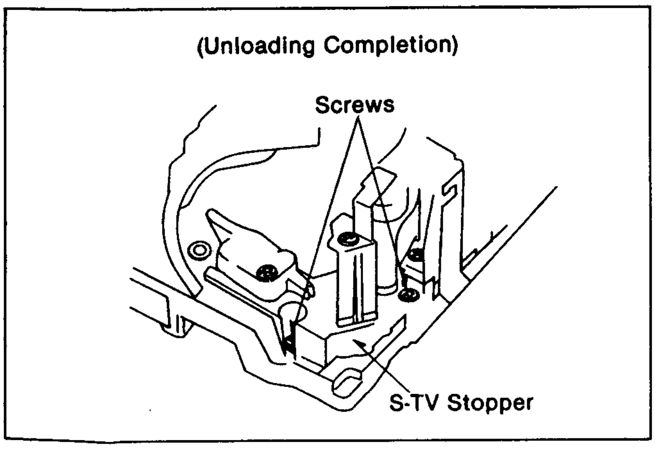

(Unloading Completion)
Screws
S-TV Stopper

Fig. M17

NOTE:
Before install of the S–TV Stopper,install the the Impedance Roller unit into the S–TV stopper.

2-4-7. ASSEMBLY PROCEDURES OF SECTOR GEAR AND PINCH ARM UNIT

(1). Install the Sector Gear so that insert the pin of Sector Gear in the ditch on the Cam Gear.
And insert the Pin to the Sector Gear from the Mechanism chassis as shown in Fig.M18.
After that,install the 2–Springs.

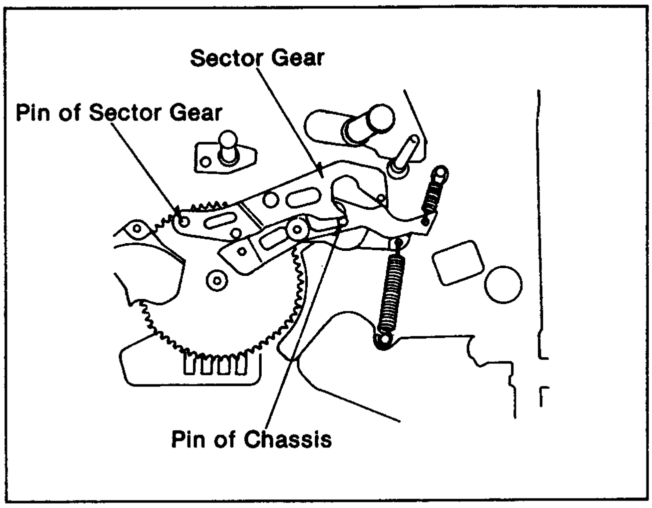

Sector Gear
Pin of Sector Gear
Pin of Chassis

Fig. M18

(2). When the installating of the Sector Gear is finished,turn the Cam Gear to clockwise that set the Mechanism to play position(loading end) as shown in Fig.M19.

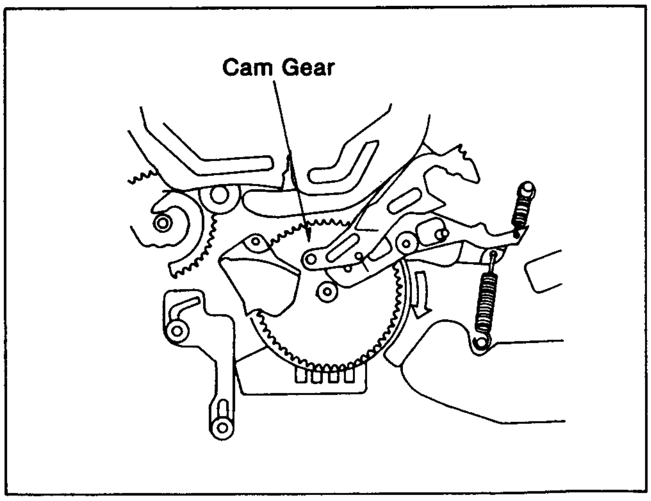


Fig. M19

(3). Install the Pinch Arm Unit,and then insert the E-Ring as shown in Fig. M20 and M21.

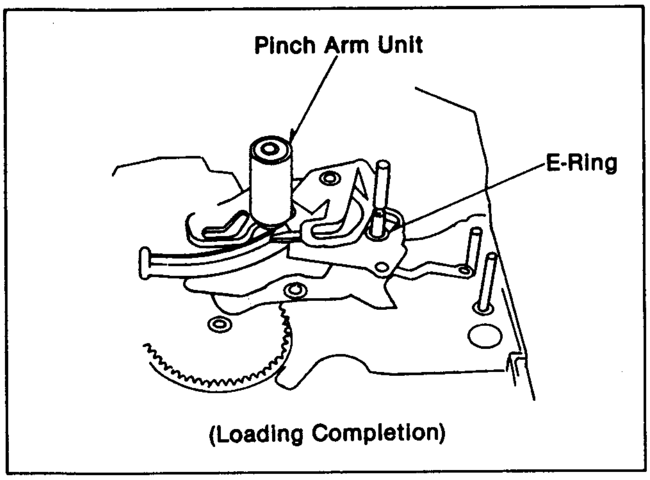

Pinch Arm Unit
E-Ring
(Loading Completion)

Fig. M20

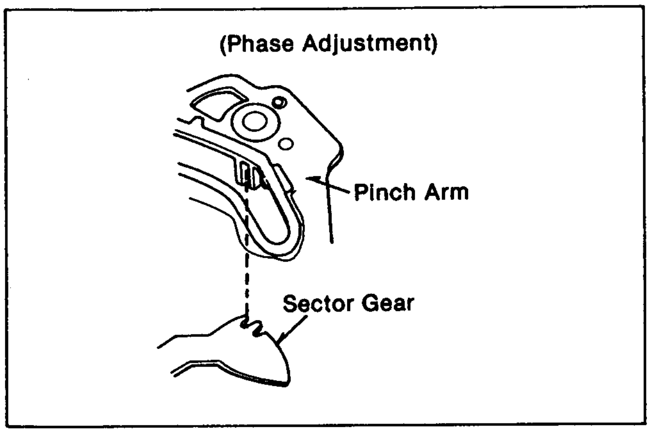

(Phase Adjustment)
Pinch Arm
Sector Gear

Fig. M21

(4). Insert the T1-returner Spring so that insert a hooked end(short side) in the hole of the Pinch Arm Base as shown in Fig.M22.

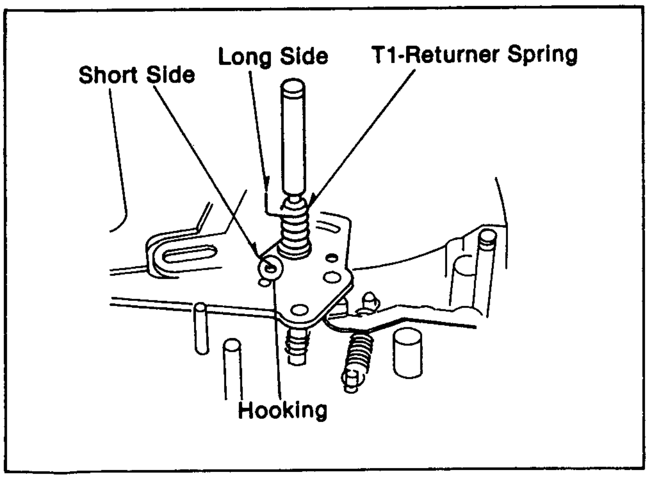

Short Side
Long Side
T1-Returner Spring
Hooking

Fig. M22

(5). Make sure of up side of T1-Returner,after that install the T1-Returner.
Then insert hooked end(long side) of T1-Returner Spring in the hole of T1-Returner.
Then,turn the T1-Returner to clockwise.
Finally,insert the E-ring as shown in Fig.M23.

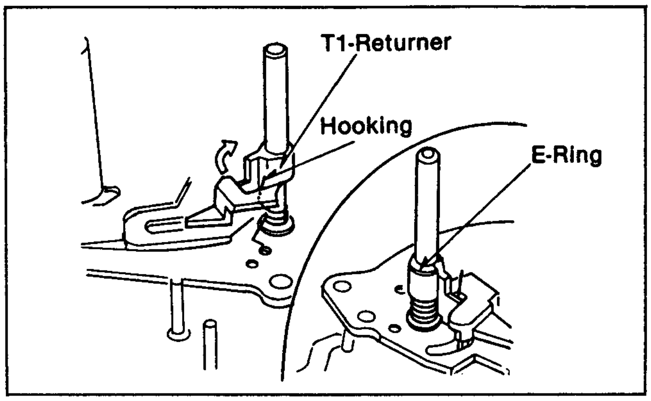

T1-Returner
Hooking
E-Ring

Fig. M23

(6). Insert the Tape Opener Spring,and then fix the Tape Opener as shown in Fig.M24.

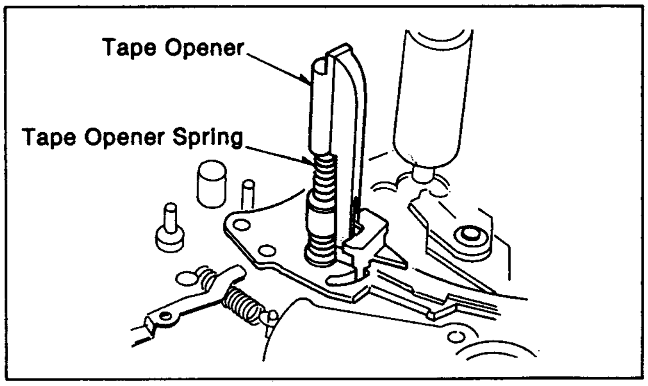

Tape Opener
Tape Opener Spring

Fig. M24

2-4-8. ASSEMBLY PROCEDURES OF T-LUTCH GEAR AND DRIVE GEAR.

(1). Turn the Cam Gear to counterclockwise that set the Mechanism to stop position(unloading end)as shown in Fig.M25.

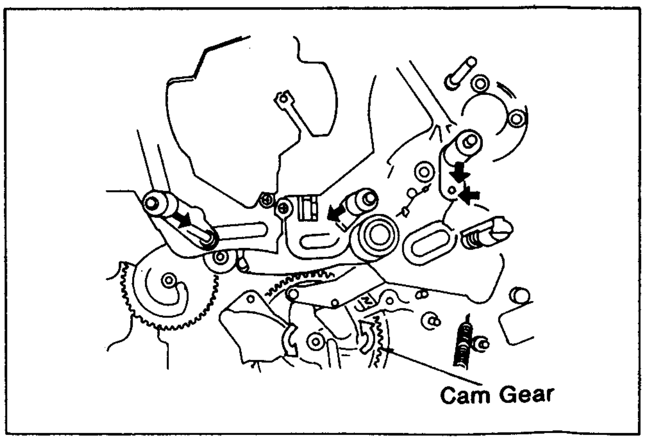


Fig. M25

(2). Install the T–Clutch gear and then insert the Cut Washer,after that install the Drive Gear D, C and A.

And then insert the Cut Washer to the each Drive Gears as shown in Fig.M26.

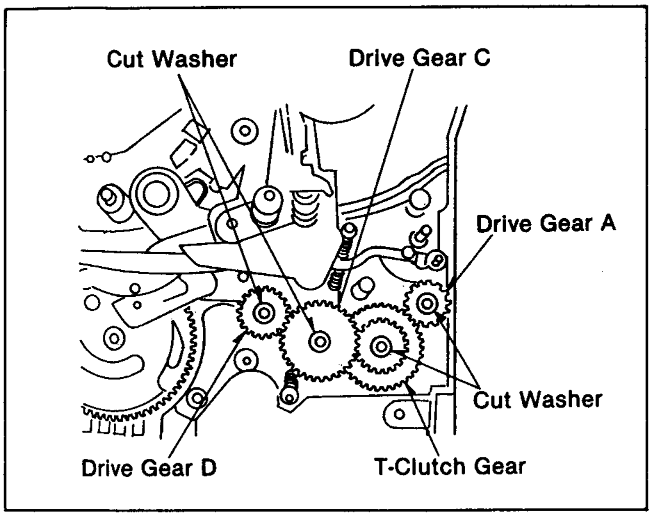

Cut Washer
Drive Gear C
Drive Gear A
Cut Washer
Drive Gear D
T-Clutch Gear

Fig.M26

2-4-9. ASSEMBLY PROCEDURES OF LOADING MOTOR AND LOADING GEAR 2, 3, 4.

(1). Install the Loading Motor Unit and tighten the 2 Screws as shown in Fig.M27.

(2). Install the Loading Gear 4 as shown in Fig. M27.

(3). Insert the washer and then install the Loading Gear 2.

(4). Insert the washer,then install the loading Gear 3.

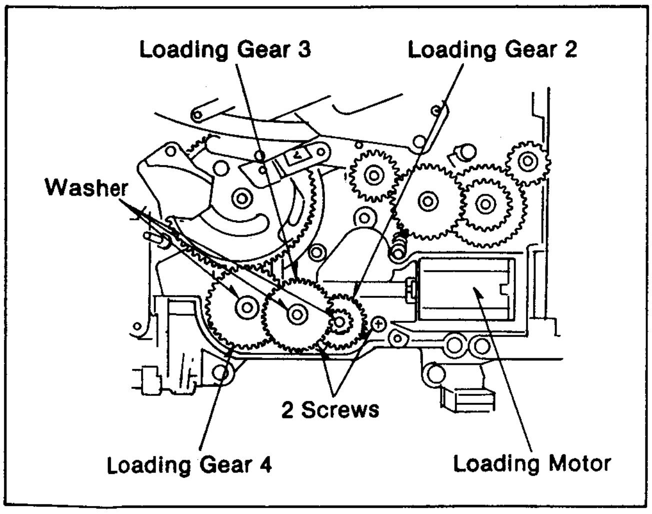

Loading Gear 3
Loading Gear 2
Washer
2 Screws
Loading Gear 4
Loading Motor

Fig. M27

NOTE : Up side of Loading Gear 4 has rib on inside circle.

2-4-10. ASSEMBLY PROCEDURES OF PULLEY PLATE UNIT AND PULLEY.

(1). Install the Pulley Plate and then tighten the 2 Screws as shown in Fig.M28.

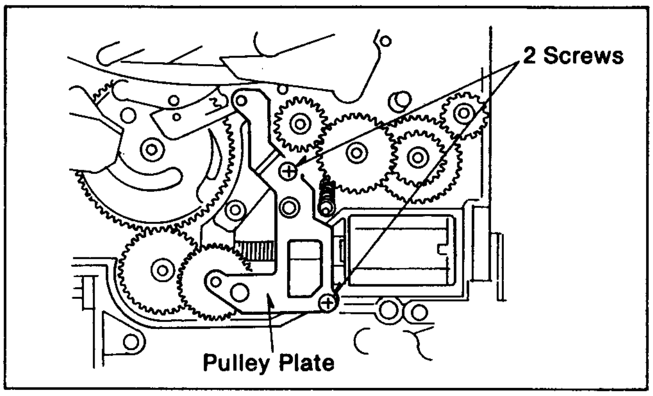

2 Screws
Pulley Plate

Fig. M28

(2). Insert the Washer and the pulley from reverse side of chassis,after that install the pulley cap as shown in Fig.M29.

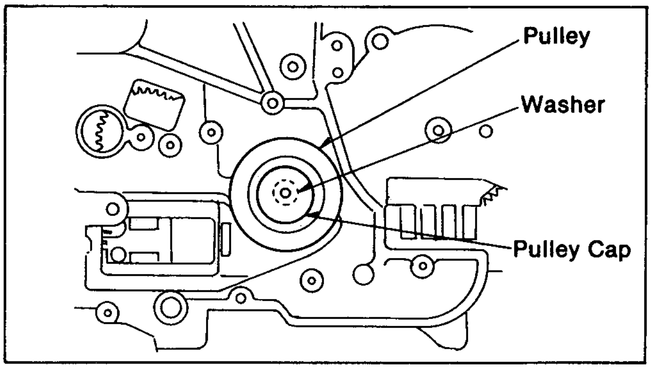

Pulley
Washer
Pulley Cap

Fig. M29

2-4-11. ASSEMBLY PROCEDURES OF CORRECTOR DRIVE ARM UNIT AND CORRECTOR A, CORRECTOR C.

(1). Insert the washer to point c and install the Corrector Drive Arm.
And then insert the Cut Washer as shown in Fig.M30.

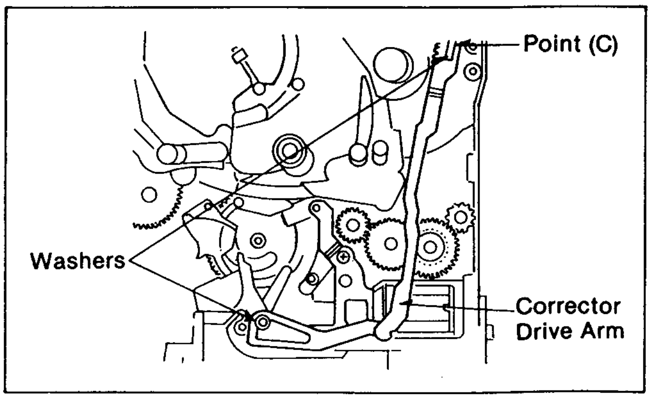

Point (C)
Washers
Corrector
Drive Arm

Fig. M30

(2). Install the Corrector (A) so that the first tip of Corrector Drive Arm comes to first tip of Corrector (A).
After that set a spring in the Corrector (A).
And then insert the Cut Washer to mount it as shown in Fig.M32 and M33.

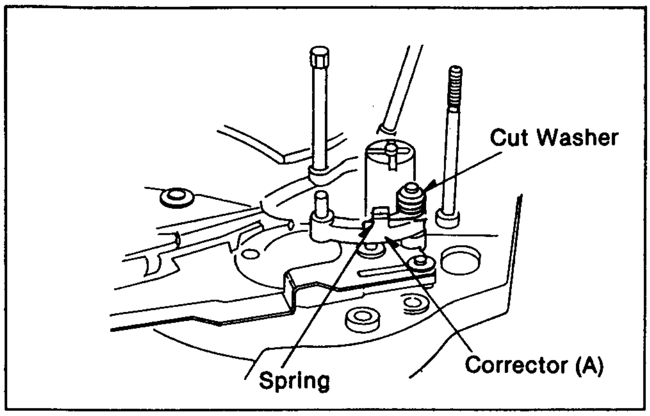

Cut Washer
Spring
Corrector (A)

Fig. M31

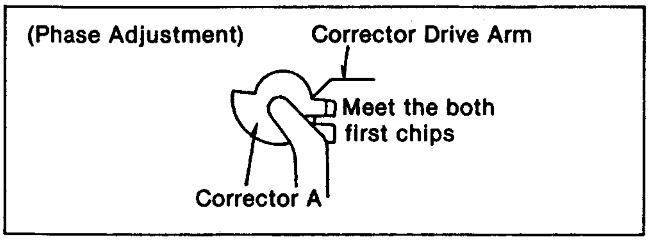

(Phase Adjustment)
Corrector Drive Arm
Meet the both first chips
Corrector A

Fig. M32

(3). Install the Corrector C and the set a Spring in the Corrector C.
After that insert the Cut Washer to mount it as shown in Fig.M33.

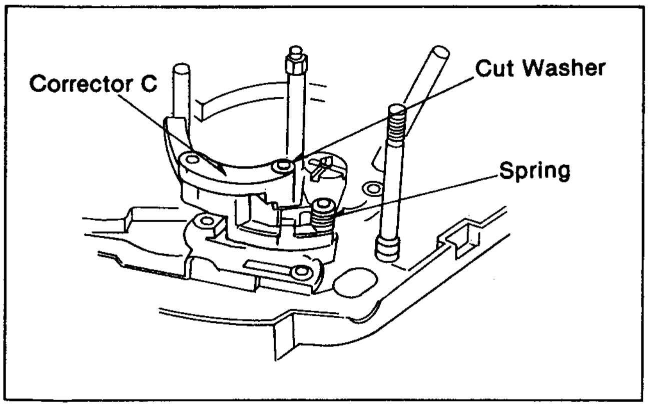

Corrector C
Cut Washer
Spring

Fig. M33

2-4-12. ASSEMBLY PROCEDURES OF CENTRE GEAR AND T5 ARM

(1). Insert the Washer and then install the Centre Gear.
After that insert the Cut Washer to mount it as shown in Fig.M34.

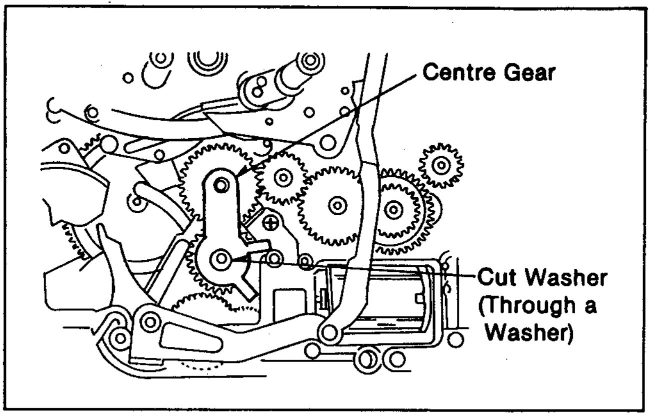

Centre Gear
Cut Washer (Through a Washer)

Fig. M34

(2). Insert the T5 Arm Spring and then install the T5 Arm.
The T5 Arm connect to the Center Gear.
After that insert the E Ring to mount it.

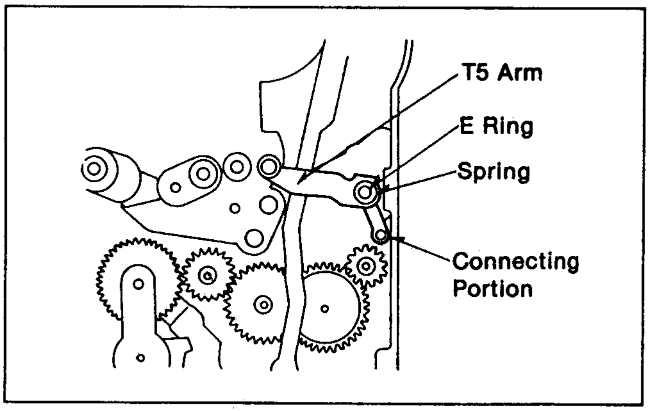

T5 Arm
E Ring
Spring
Connecting Portion

Fig. M35

2-4-13. ASSEMBLY PROCEDURES OF TENSION REGULATOR UNIT AND SUPPLY REEL TABLE.

(1). Insert the Washer and then install the Tension Regulator Unit so that the Tension Band Arm of Tension Regulator Unit connect to the Loading Gear.
fter that insert the Cut Washer as shown in Fig.M36.

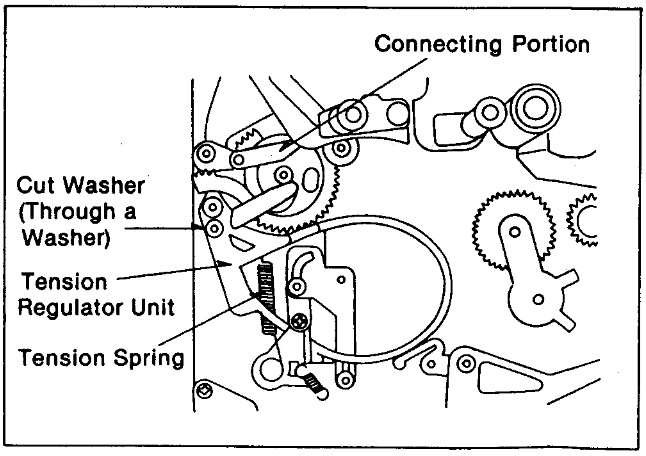

Connecting Portion
Cut Washer (Through a Washer)
Tension Regulator Unit
Tension Spring

Fig. M36

(2). Set the Tension Spring in the Lock Base Unit.

(3). Insert the Washer and then install the Tension Arm so that make sure of phase between the Tension Arm and Tension Band as shown in Fig.M37.
After that insert the Cut Washer to mount it.

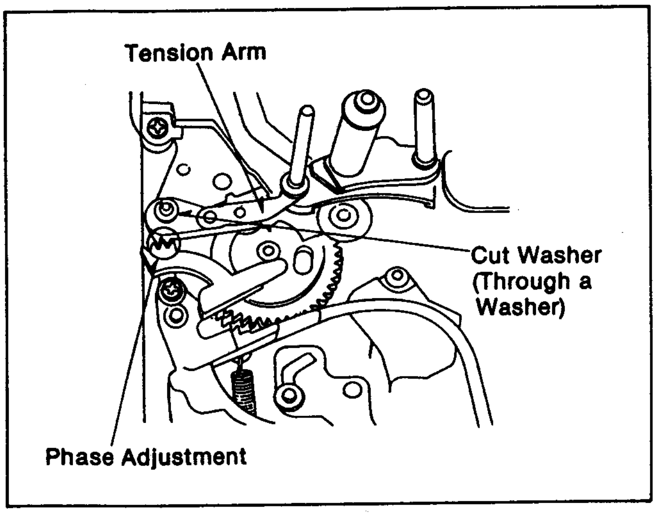

Tension Arm
Cut Washer (Through a Washer)
Phase Adjustment

Fig. M37

(4). Insert the Washer and then install the Supply Reel Table,after that insert the Cut Washer to mount it.

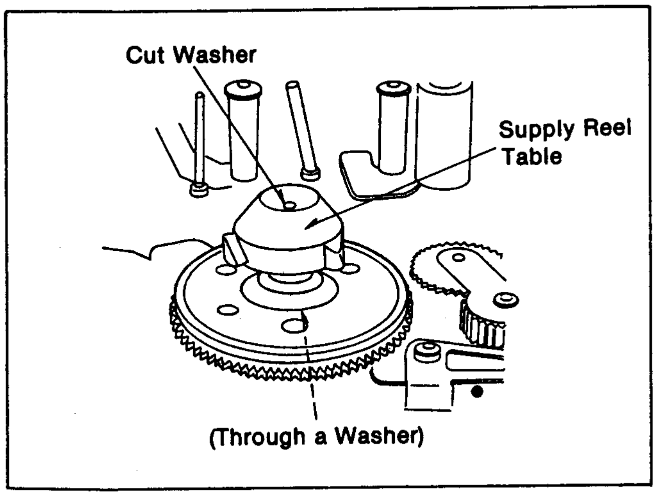

Cut Washer
Supply Reel Table
(Through a Washer)

Fig. M38

2-4-14. ASSEMBLY PROCEDURES OF A/C HEAD AND CAPSTAN MOTOR UNIT

(1). Install the A/C Head Spring and the A/C Head.

(2). Tighten the hight Adjustment Screw for A/C Head.

NOTE:
Specification of Hight Adjustment of A/C head is as same as interchangebility adjustment.

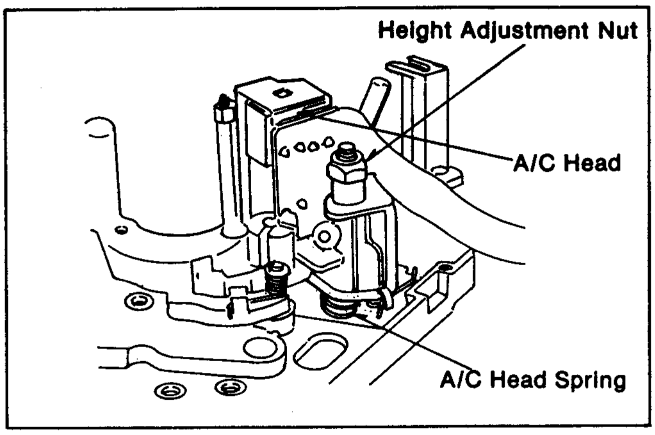

Height Adjustment Nut
A/C Head
A/C Head Spring

Fig. M39

(3). Install the Capstan Motor and the tighten the 3 screws as shown Fig.M40.

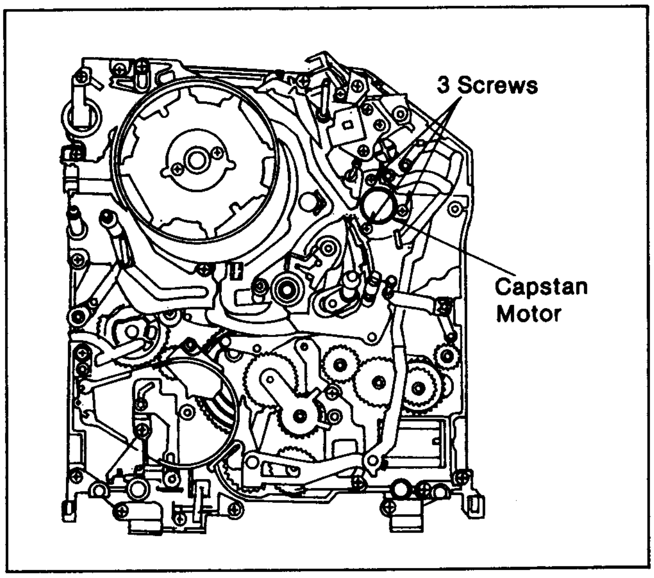

3 Screws
Capstan Motor

Fig. M40

2-4-15. ASSEMBLY PROCEDURES OF CYLINDER UNIT

(1). Install the Cylinder unit from the top side. and then tighten the 3–Screws as shown Fig.M41.

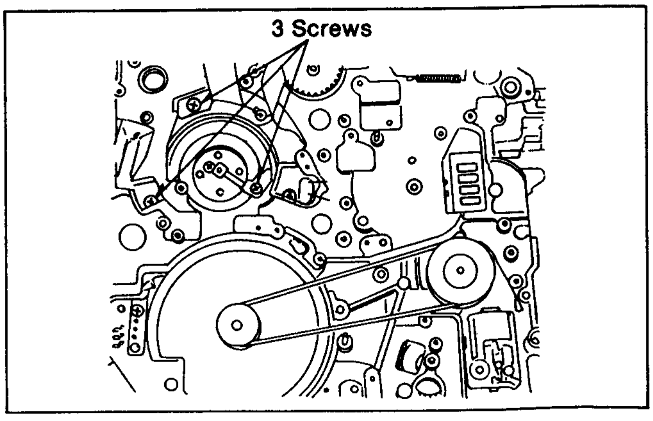


Fig. M41

2-5. INTERCHANGEABILITY ADJUSTMENT

2-5-1. ADJUSTMENT OF BACK TENSION

*Equipment Required.
Tension meter
Alignment tape (VFM8180HUPF)
Specification 17+-2g.

(1) Remove the Impedance Roller.
(2) Insert the cassette tape and playback the tape.
(3) Insert the Tension Meter to Mechanism as shown Fig.T1.

If Back tension is high, spring position change to a.
If Back tension is low, spring position change to c as shown Fig. T2

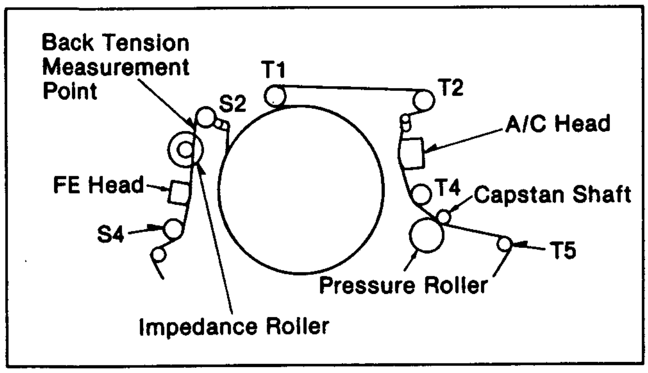

Back Tension Measurement Point
T1
S2
T2
A/C Head
FE Head
T4
Capstan Shaft
S4
T5
Pressure Roller
Impedance Roller

Fig.T1

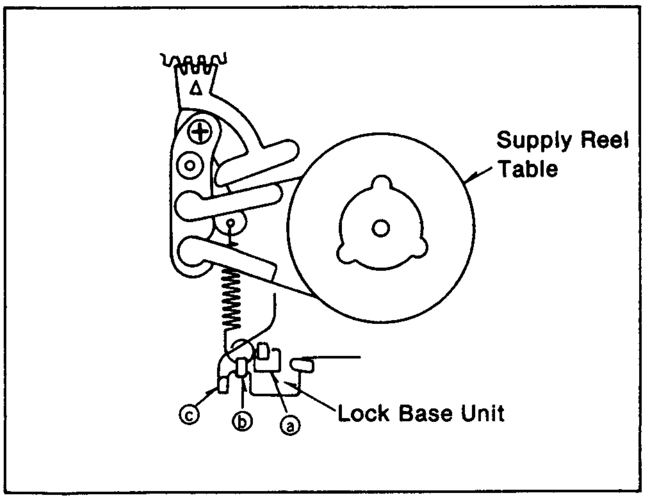

Supply Reel Table
ⓒ
ⓑ
ⓐ
Lock Base Unit

Fig.T2 S-REEL TABLE LOCK.BASE UNIT

(4) After check the Back tension, install the impedance Roller.

2-5-2. HEIGHT ADJUSTMENT OF TAPE GUIDE POST (PRELIMINARY ADJUSTMENT)

Height adjustment of S4 Post, T4 POST, T5 Post specification.

S4 Post: 17.125+-0.025mm
T5 Post: 17.175+-0.025mm
T4 Post: 17.175+-0.025mm

(1) For adjustment S4 Post height, turn 4mm Nut (A) Slightly in either direction as necessary to the correct clearance between the uuper edge of lower tape guide on S1 Post and lower portion of Mecha chassis Fig. T3 4mm Nut A. upper edge of the Lower tape guide.

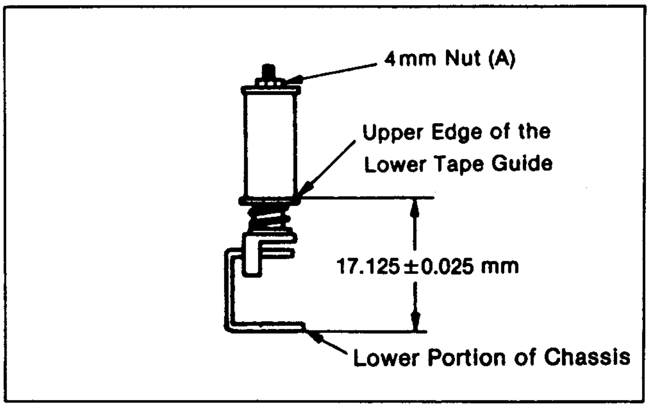

4mm Nut (A)
Upper Edge of the Lower Tape Guide
17.125±0.025 mm
Lower Portion of Chassis

Fig. T3

Confirmation of Tape Travel
(1) Playback a cassette tape and confirm that the tape travels Without curling at upper and lower guides on posts T4, T2, S4 and S2. Fig. T4.

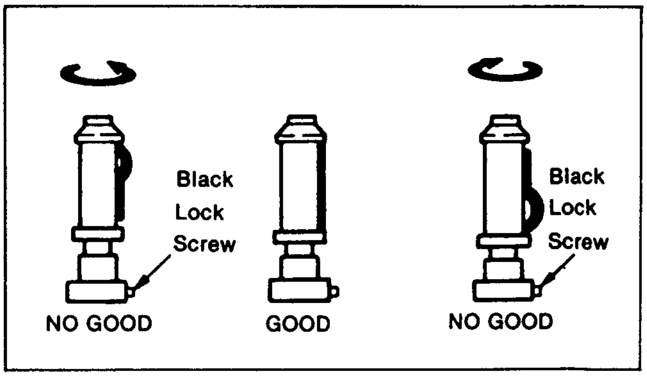

Black Lock Screw
NO GOOD
GOOD
Black Lock Screw
NO GOOD

Fig. T4

(2) If curing is apparent adjust the height of posts by turning the top of post With Hex Wrench.

Note:
Before turning S2 and T1, slightly loosen the Black Lock screw useing the Screw driver.

2-5-3. TAPE INTERCHANGEABILITY ADJUSTMENT

NOTE:

1) To perform these adjustment/confirmation procedures make sure that the Tracking control is set in fixed position by connecting the jumper wire between P6007–6 and GND.

2) Before these adjustment/confirmation procedures,remove the cassette protective tape cover from a cassette tape or the Alignment tape (VFM8180HUPF).

*Equipment Reqaired
Dual Trace Oscilloscope
Alignment tape (VFM8180HUPF)

2-5-4. CONFIRMATION OF TAPE TRAVEL

(1) Confirmation of A/C Head. This confirmation is required when the A/C Head or capstan Motor is replaced and for preliminary height adjustment

(2) Looking at the lower edge of the control Head with the tape in motion, ensure that lower edge of the tape runs 0.25mm above the lower edge of control Head. If it doesn't turn the A/C Head height Adjustment Nut slightly in either direction as necessary to correct it.

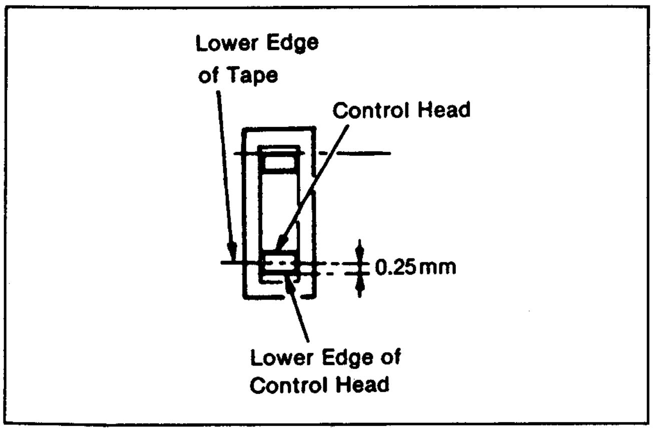


Fig.T5.

2-5-5. AZIMUTH ADJUSTMENT OF A/C HEAD.

(1) Connect the oscilloscope to Audio Line Output.

(2) Play back the Monoscope portion (6KHZ,MONO) of the Alignment tape.

(3) Adjust the Azimuth Adjustment screw on the A/C Head Base in Fig. T6 so that output level is at a maximum.

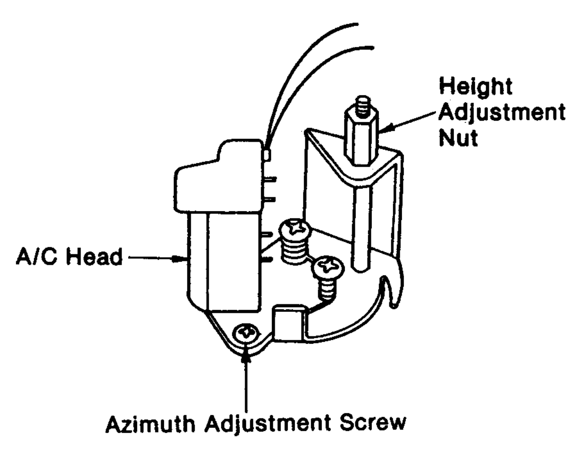


Fig. T6

2-5-6. HORIZONTAL POSITION ADJUSTMENT OF A/C HEAD

(1) Set the tracking control to the fixed position by pushing both of the tracking control Up/Down switches, in at the same time. Connect the oscilloscope to P5001 pin 23.

(2) Playback the monoscope portion of the alignment tape and confirm that RF envelope appears as show Fig. T7

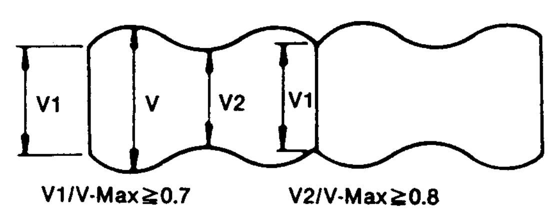


Fig. T7

(3) If adjustment is required, slowly move the A/C Head Base back and forth using a screwdriver by Turning screwdriver by Turning screw D so that envelope is at a maximum.

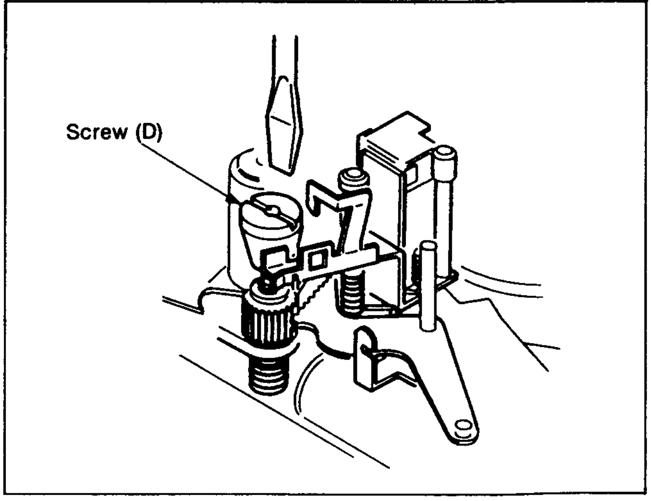


Fig. T8

(4) Confirmation of the correct adjustment can be made by alternately pushing the Traking control Up/Down Switches, to check the symmetry of the envelope.
(5) Reconfirm the symmetry of the envelope. If it has changed, repeat step (B) and (4).

2-5-7. CONFIRMATION/ADJUSTMENT OF ENVELOPE OUTPUT

(1) Set the tracking control to the fixed position by pushing both of the tracking control Up/Down Switches, connect the Oscilloscope to P5001 PIN23.
(2) Playback the Monoscope portion of the Alignment Tape and adjust the height of posts S2, T1 posts watching the scope display so that the envelope becomes as flat as possible. (V1/V−MAX>=0.7, V2/V−MAX>=0.8)
If adjustment is required, turn top of post with Hex, wrench for adjustment of S2 and T1.

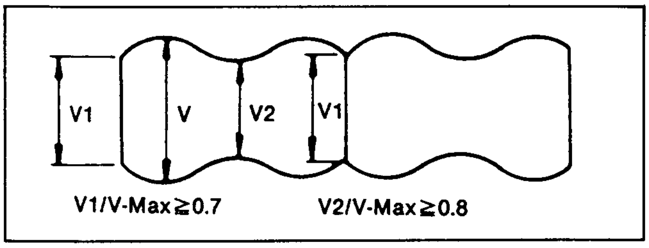

V1
V
V2
V1
V1/V-Max≧0.7
V2/V-Max≧0.8

Fig. T9

(3) When the scope display is shown in Fig. T10 adjust the heihgt of S2 so that the wave looks like Fig.T12.

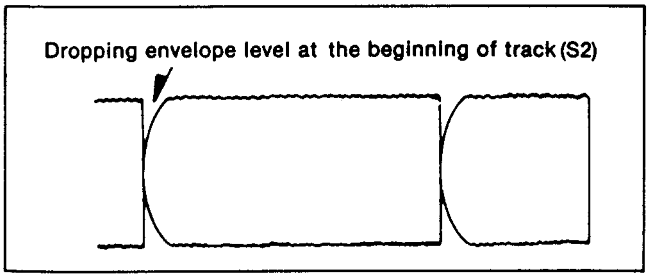

Dropping envelope level at the beginning of track (S2)

Fig. T10

(4) When the scope display is shown in Fig. T11. adjust the height of T1 so that the wave form looks like Fig. T12.
Fig. T11

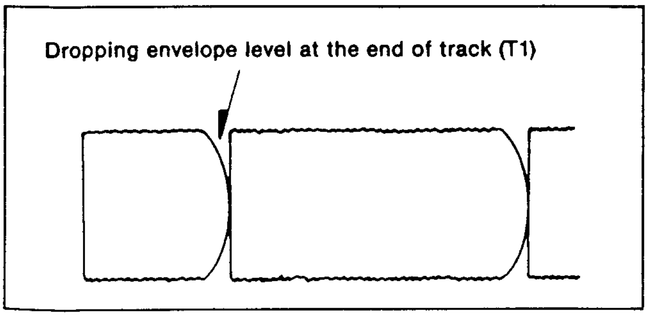

Dropping envelope level at the end of track (T1)

Fig. T11

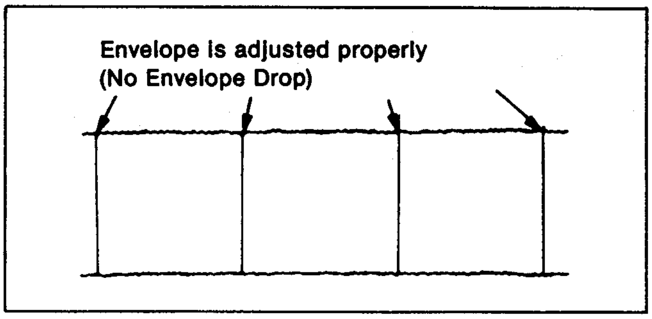

Envelope is adjusted properly
(No Envelope Drop)

Fig. T12

2-6. ELECTRICAL ADJUSTMENT PROCEDURES

2-6-1. ELECTRICAL ADJUSTMENT FOR CAMERA SECTION

TEST EQUIPMENT AND TOOLS

The following equipment is required for adjustment of the CAMERA section.

1. Oscilloscope
   Dual Trace, 50MHz, 2mV/DIV
   10 : 1 Probe
   1 : 1 probe
2. Digital Volt Meter of VTVM
3. Frequency Counter
4. Vectorscope
5. Light Meter
6. Tripod
7. Colour Video Monitor
8. Lighting
   140 foot-candles (1400lux). on the chart surface 3200 degrees K.
9. Reflection Chart.
   - * Logarithmic Gray Scale chart (Part No. : YWV2310RB99)
   - * Colour Chip Chart (Part No. : YWV2100RB98)
   - * Ball Chart (Part No. : UWV2100RB03)
   - * Hunting Chart (Part No. : VFK0546)
   - * White Chart (Card) (Part No. : VFK0546)
   - * J Chart (Part No. : YWV2100RB3)
   - * B/W Chart (Part No. : VFK0546)
   - * Gray-White Chart (Part No. : VFK0546)
   - * Colour Bar Chart (Part No. : VFKS003B)
10. Plastic Tip Driver
11. E.V.R. FLXTURE (Part No. : VFK0644)

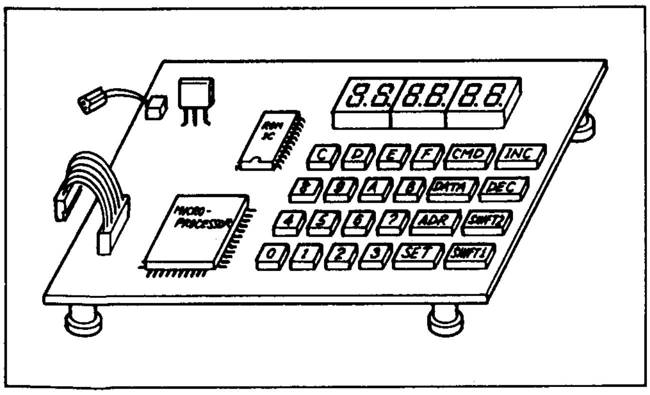

8.8.8.8.8.8.
C
D
E
F
CMD
INC
B
9
A
8
DATA
DEC
4
5
6
7
ADR
SHIFT2
0
1
2
3
SET
SHIFT1
MICRO-PROCESSOR

Fig. C1

12. Colour temperature Conversion filter
    - * C12 Filter (Part No. VFK0374)
    - * C2 Filter (Part No. VFK0375)
    - * C8 Filter (Part No. VFK0547)

14. Camera Extension Cables

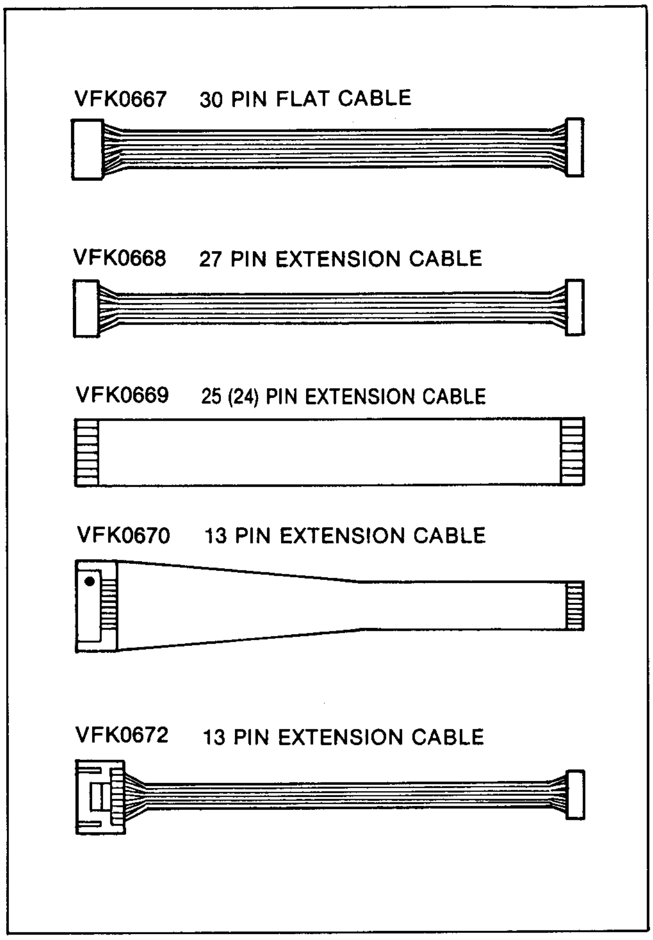

VFK0667 30 PIN FLAT CABLE
VFK0668 27 PIN EXTENSION CABLE
VFK0669 25 (24) PIN EXTENSION CABLE
VFK0670 13 PIN EXTENSION CABLE
VFK0672 13 PIN EXTENSION CABLE

Fig. C2

E.V.R. FIXTURE

Camera Process section employs the remarkable memory IC so cabled E.E.P.R.O.M (Electric Erasable Programmable Read Only Memory) that fulrills the role of variable resistor in conventional camera process.

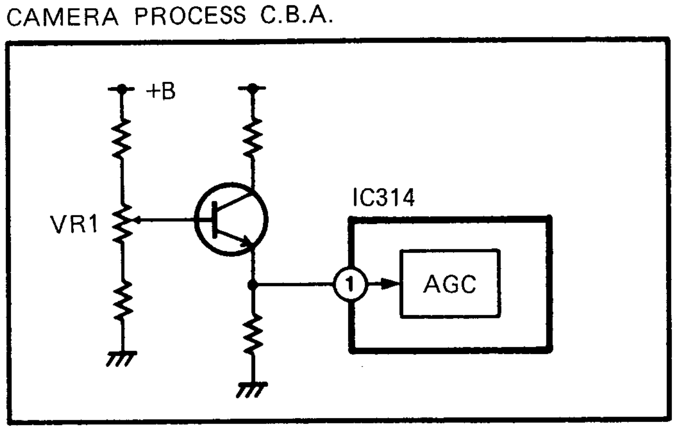
In the conventional camera process, each adjustment points were used to be adjusted by turning variable resistor as shown in Fig. C3.

In case of NV-S1 adjustmsent voltage is msemorized in EEPROM as 8 bit digital data.

EEPROM supplies the memorized adjustment votage to the adjustment point through D/A converter as shown in Fig. C4.

The data in EEPROM can be electrically exchanged freely. E.V.R (Electric Variable Resistor) has been developed to exchange the 8 bit data of EEPROM in process circuit.

[CONVENTIONAL ADJUSTMENT]


CAMERA PROCESS C.B.A.
+B
VR1
IC314
1
AGC

Control voltage is decided by variable resistor.

Fig. C3

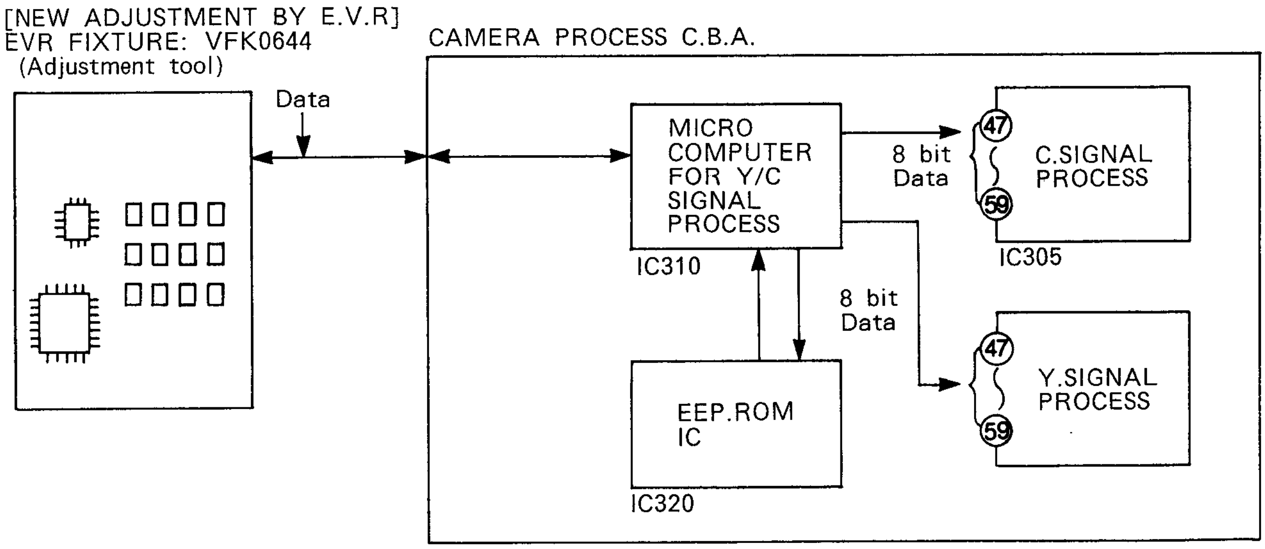
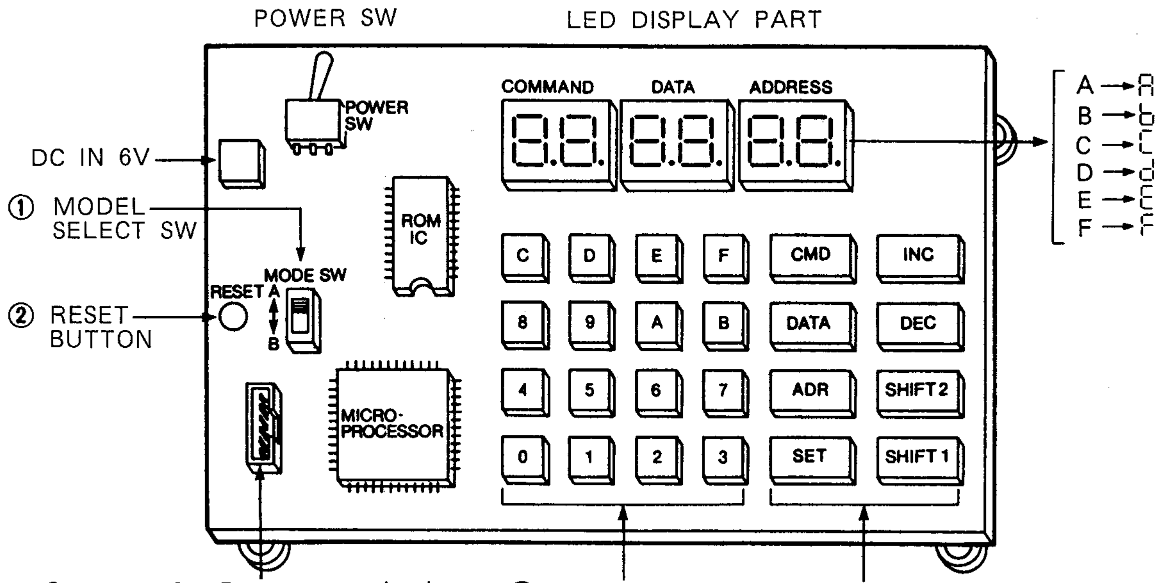

[NEW ADJUSTMENT BY E.V.R]
EVR FIXTURE: VFK0644
(Adjustment tool)
Data
CAMERA PROCESS C.B.A.
MICRO COMPUTER FOR Y/C SIGNAL PROCESS
IC310
8 bit Data
47
59
C.SIGNAL PROCESS
IC305
8 bit Data
EEP.ROM IC
IC320
47
59
Y.SIGNAL PROCESS

Fig. C4

E.V.R can also communicate with D/A converter directly to change the each control voltage.
Normally EEPROM is having voltage data and is sent to D/A converter where digital data is changed into DC voltage (control voltage).
Using E.V.R. you can change the data stored in EEPROM easily, in other words, you can adjust the camera process section. And E.V.R. can also send the date to D/A converter directly for confirming the adjustment.

Name of key


POWER SW
LED DISPLAY PART
DC IN 6V
① MODEL SELECT SW
② RESET BUTTON
POWER SW
MODE SW
RESET
A
B
ROM IC
MICRO-PROCESSOR
COMMAND
DATA
ADDRESS
A →
B →
C →
D →
E →
F →
C
D
E
F
CMD
INC
8
9
A
B
DATA
DEC
4
5
6
7
ADR
SHIFT2
0
1
2
3
SET
SHIFT 1

Connector for Data communication
1: clock
2: Data
3: VD
4: Test (H)
5: –
6: GND

④ Hexadecimal Keys

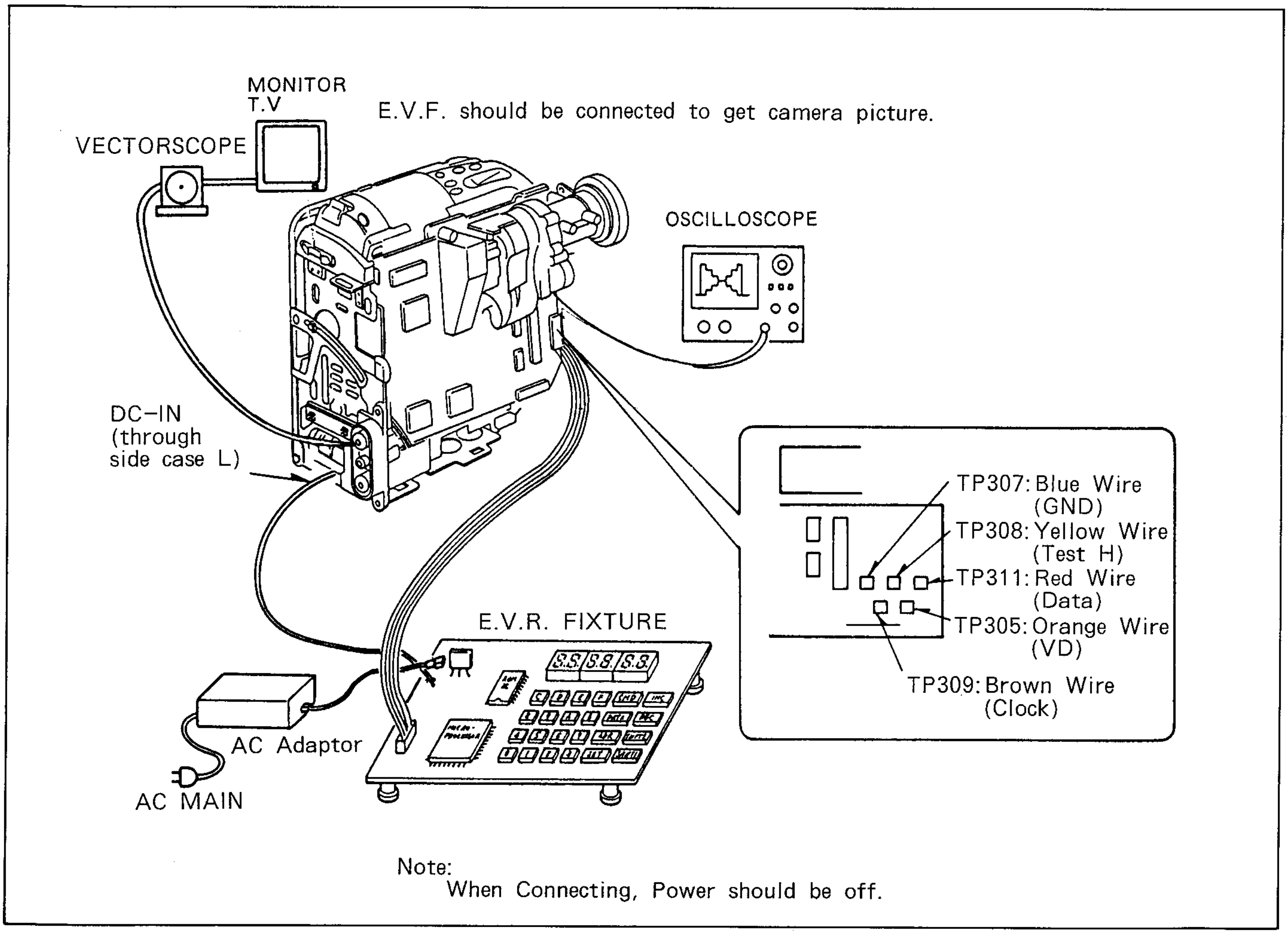
⑤ Operation buttons
CMD → Command
ADR → Address
INC → Increment
DEC → Decrement

NO.	NAME	DESCRIPTION
①	MODE SW	MODEL selection switch. In case of NV-S1/NV-S100, turn it to "B" side.
②	RESET BUTTON	After Power is on, if operation is not stable, push this SW.
③	ROM IC	ROM IC of which Programing (to operate E.V.R) is memorized in. In the future, to cope with new camcorder servicing, this ROM IC could be replaced to new version.
④	HEXADECIMAL KEYS	Key buttons of 16 pieces (from "0" to "F"). These are used when "COMMAND", "DATA" or "ADDRESS" is set.
⑤	OPERATION BUTTONS	The buttons to operate writing, reading or setting the data.
	CMD: Command button	This is used to decide the which mode (command) between E.V.R and camcorder (for example, data writing or reading) to perform.
	DATA: Data button	For changing Data.
	ADR: Address button	To appoint the EEPROM address or D/A converter address.
	SET: Set button	To perform the appointed command (for example reading or writing).
	INC: Incliment DEC: Decliment	Increase or decrease the data one by one (+1, −1)
	SHIFT 1 button	To carry out macro operation (while pushing with hexadecimal keys) SHIFT 1 button is used. (Macro operations will be described later)
	SHIFT 2 button	Not used.

Fig. C5

PREPARATION

1) Remove bothe side case (R) and (L) referring disassembly method.
2) Connect the E.V.R. FIXTURE and measuring equipments as shown in Fig. C6.


MONITOR
T.V
VECTORSCOPE
OSCILLOSCOPE
DC-IN
(through
side case L)
E.V.R. FIXTURE
AC Adaptor
AC MAIN
TP307: Blue Wire
(GND)
TP308: Yellow Wire
(Test H)
TP311: Red Wire
(Data)
TP305: Orange Wire
(VD)
TP309: Brown Wire
(Clock)

E.V.F. should be connected to get camera picture.

Note:
When Connecting, Power should be off.

Fig. C6

1) Select the mode selector on E.V.R. Fixture to ″B″ side.
   (Refer to Fig. C5)
2) Turn the power SW of E.V.R. fixture on.
3) Turn the power SW of Camcorder NV-S1 on Then LED Display on E.V.R. Fixture indicates "08 80 00" If display does not indicate this, Push Reset button or confirm the connection cables between EVR and CAMERA.
   * In this time, Picture is not appeared on TV Monitor but this is normal.
4) Push the both buttons of the ″SHIFT 1″ KEY and ″1 KEY″ together.
   Picture is appeared in EEPROM is set into D/A converter).

(Before Adjusting, How to use the E.V.R. Fixture)

1) How to Read out the Data which is being stored in EEPROM.
Connect the E.V.R. Fixture as shown in Fig. C6 and perform the "Initial setting" (Pushing Reset button).

Result:
Adjustment value of AGC has been set for "4D". It is convenient to read out the data like this (and take memo) before writing the new data next time)
even if something mistake is happened when writing the new data, you can rewrite original data.

Item		Proceduring Order	Buttons to be Pushed	LED Indication
For Example, Recording out the data of AGC Adjustment comunication from camcorder to E.V.R Fixture → E.V.R	1	Set the Command mode to "04" "04" is read out command. (Refer to command description)	CMD 0 4	LED lights up 04/80 00 Command setting
	2	Set the Address of EEPROM	ADR 2 2	04 4d 22 Address setting of EEPROM LED lights up
	3	Read out the data	SET Push this for 2 seconds	04 4d 22 data for AGC for example

Fig. C7

2) Writing the New Data

(1) Search and Write Procedure (For example : V/S Adjustment).

conf ormation:
Confirm whether data is written correctly or not.

Proc edure:
1. Set the Command to "04".
2. Set the Address to "08".
3. Push the "SET" button.
4. The number which is indicated on DATA LED is a data which has been written.

Item		Proceduring Order	Buttons to be Pushed	LED Indication
For Example, writing the ALC adjustment data. E.V.R→Camera	1	Set the command to "01".	CMD 0 8	Command for search mode.
	2	Set the Address of D/A converter for "21" E.VR→D/A (communication from E.V.R to D/A converter))	ADR A F	LED lights up. 0 1/80 AF
	3	Adjustment Push "DEC" or "INC" button so that V/S ratio at TP310 become 2.33+ −0.1	Search with INC or DEC	0 180 AF LED lights up
	4	Write in the data after finding the best front.	SHIFT 1 + 0 Push both buttons together.	LED will disappear. 0 14d/AF Data "4D" has been stoved into EEPROM.

Fig. C8

3) Direct Writing Procedure

Item	Proceduring Order		Buttons to be Pushed	LED Indication
	1	Initial Setting same as (1)	same as (2)	same as (2)
For Example, writing the V/S adjustment data	2 3 4	Searching the best Point. same as (1)	same as (2)	same as (2)
	5	Change the command to "02"	CMD 0 2	LED lights up 02 uu 21 Command for Direct writing
	6	Set the address of EEPROM to "06"	ADR 0 8	address of EEPROM 02 uu 08. LED lights up
	7	Set the data of best point "4D"	DATA 3 A	02 3A. 08 LED lights up
	8	Write the data	SET Push this for 2sec.	LED disappear. 02 3A 08

Fig. C9

Confirmation:
Confirm whether data is written correctly or not.
Procedure –
1. Set the Command to "04"
2. Set the Address to "08"
3. Push the "SET" button
4. The number which is indicated on DATA LED is a data which has been wtitten.

(Description of Command)
Selecting the communication for what kind of data exchange is performed between EVR Fixture and camcorder.

Command	Communication	Contents
02	EVR Fixture → EEPROM	Writing the data to address of EEPROM.
04	EEPROM → EVR Fixture	Reading out the data of EEPROM.
08	(or) EVR Fixture → Micon (RAM)	Data transmission of EVR Fixture to Micro computer (RAM).
09	Micro computer (RAM) → EVR Fixture	

Fig. C10

(Error Indication)

If something error is happening while EVR is working, EVR indicates the error message which are mentioned in Fig.C11 for 2 seconds and then return to previous indication.

Error NO.	Contents of Error	Simple checking method
1	Set the wrong command number	
2	Set the wrong Address number	
3	VD signal from camera is not coming.	lead wire of TP may be cut out
4~6	Detect the error during communication	
7	Writing error in the EEPROM of camera.	
8	Communication error in the EEPROM of camera	

Fig. C11

(Iris Control)

(1) Manual
Push “CMD”
Push “ADR”
Push “DATA”
Push “SET”

(2) Close
Push “CMD”
Push “ADR”
Push “DATA”
Push “SET”

(3) Open
Push “CMD”
Push “ADR”
Push “DATA”
Push “SET”

(4) ALC
Push “CMD”
Push “ADR”
Push “DATA”

(Adjustment Items reguired after replacing the individual compornents.)

When following parts are replaced, check the following adjustment Items and adjust these if necessary.

NO.	Replaced Parts	Adjustment point or check points which are required			
		ALL ADJ. Points	Colour Reproduction	Focus & Zoom Encoder	Other ADJ.
1	IC320 (EEPROM)	○			
2	CCD Unit Individual		○	○	
3	Process C.B.A	○			
4	Sensor AF C.B.A	△	○	○	
5	Lens Unit			○	Hole Amp
6	Focus Encoder C.B.A			○	
7	IC310				
8	IC203				CDS Gain
9	IC204				AGC Gain, ALC Gain A/D input level
10	IC309				V/S, Y Clip Level
11	IC702				Hole Amp
12	other				

○ mark ....Adjustment may be required.
△ mark ....Confirm adjustment necessity and adjust it, if necessary.
Colour Reproduction ....WB, Colour gain, colour phase adjustments.

Fig. C12

(Standard Setting for Camera Adjustment)

Unless specified, wsitches are set to following positions.

1) White Balance Switch ... Indoor
   AF ... Auto
   High speed shutter ... OFF
   Fade ... OFF
   EIS ... OFF
   These are set sutomatically after performing the "Initial setting" with EVR.
2) Iris ... Center
   (ALC condition)
3) Mode Selector ... Manu al.
4) Use 3200 dergrees kelvin light source for lighting.
5) For trigger the oscilloscope, use Video output.
6) Service work for camera unit must be performed in a dust free location to maintain the lens cleanliness.

(Hexadecimal—Decimal Conversion Table)

For some of adjustment Items, calculation of hexadecimal data (indicated on LED of EVR Fixture) is needed to obtain the adjustment data.

In these cases, convert the hexadecimal value to decimal value before calculation and after calculation is finished , reconvert the result to hexadecimal to obtain the adjustment data. Thus, write the adjustment data into EEPROM.

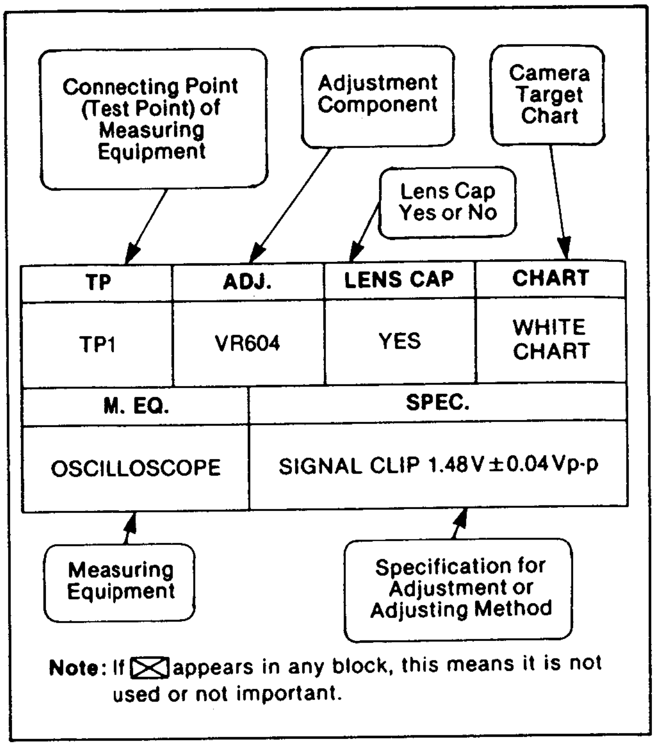
A hexadecimal – Decimal conversion table is shown in Fig. C13.

Hexadecimal lower digit Hexadecimal upper digic	0	1	2	3	4	5	6	7	② 8	9	A	b	C	d	E	F
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
① A	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
b	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
d	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

For example: If indication of EVR is "A8" (as upper digit is "A" and lower digit is "8"), a decimal value of "168" is obtained from the intersection of ① and ② in the above table.

Fig. C13 Hexadecimal–Decimal Conversion Table

HOW TO READ THE ADJUSTMENT PROCEDURES (FOR USE OF CONVENTIONAL VR)


Connecting Point (Test Point) of Measuring Equipment
Adjustment Component
Camera Target Chart
Lens Cap Yes or No
Measuring Equipment
Specification for Adjustment or Adjusting Method

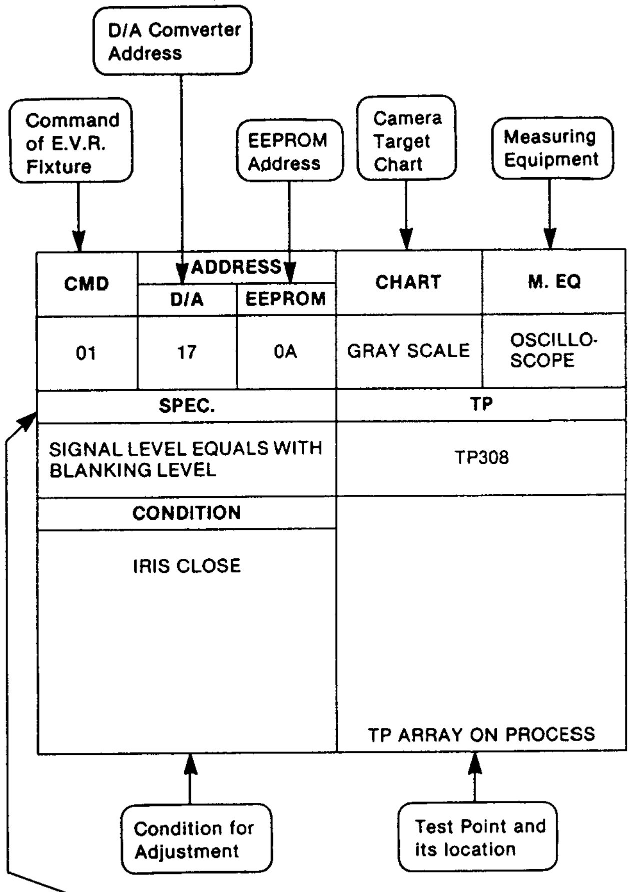
TP	ADJ.	LENS CAP	CHART
TP1	VR604	YES	WHITE CHART

M. EQ.	SPEC.
OSCILLOSCOPE	SIGNAL CLIP 1.48V±0.04Vp-p

Note: If ☒ appears in any block, this means it is not used or not important.

Fig. C14

HOW TO READ THE ADJUSTMENT PROCEDURES (FOR USE OF E.V.R.)


D/A Comverter Address
Command of E.V.R. Fixture
EEPROM Address
Camera Target Chart
Measuring Equipment
Condition for Adjustment
Test Point and its location
Specification for Adjustment or Adjusting method

CMD	ADDRESS		CHART	M. EQ
	D/A	EEPROM		
01	17	0A	GRAY SCALE	OSCILLO-SCOPE

SPEC.	TP
SIGNAL LEVEL EQUALS WITH BLANKING LEVEL	TP308
CONDITION	
IRIS CLOSE	TP ARRAY ON PROCESS

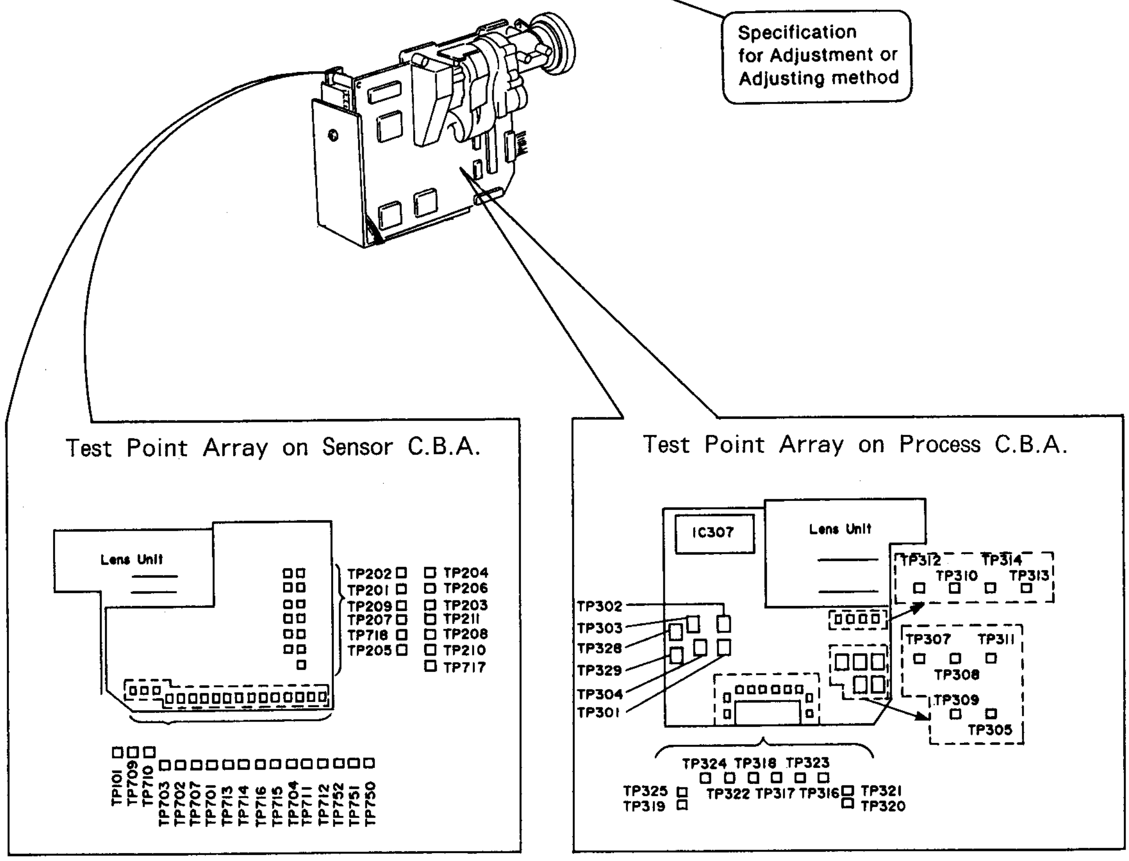

Test Point Array on Sensor C.B.A.
Lens Unit
TP202
TP201
TP209
TP207
TP718
TP205
TP204
TP206
TP203
TP211
TP208
TP210
TP717
TP101
TP709
TP710
TP703
TP702
TP707
TP701
TP713
TP714
TP716
TP715
TP704
TP711
TP712
TP752
TP751
TP750
Test Point Array on Process C.B.A.
IC307
Lens Unit
TP302
TP303
TP328
TP329
TP304
TP301
TP312
TP314
TP310
TP313
TP307
TP311
TP308
TP309
TP305
TP324
TP318
TP323
TP325
TP319
TP322
TP317
TP316
TP321
TP320

Fig. C14-1

1. DATA WRITING FOR FIXED VALUE

1–1. When EEPROM is replaced, All item needs Re-Adjustment.

But some Item has Fixed Value that out of relation to EEPROM and Process IC.
Therepore If EEPROM replaced, some Item must be write its data to EEPROM directly.
Write the following data to EEPROM directly.

Note :
Direct Data writing of Fixed Value is must be done before adjust the camera unit.

1–2. Example.

(1) Item 2. GAIN SET.

1. Set the command to "08" by pushing "CMD" key, "0" key and "8" key.
2. Set the address to "6E" by pushing "ADR" key, "6" key and "E" key.
3. Set the data "88" by pushing "DATA" key, "8" key and "8" key.
4. Change the command to "02" by pushing "CMD" key, "0" key and "2" key, and change the address to "01" by pushing the "ADR" key, "0" key and "1" key Then, push the "SET" key.

NO.	ITEM	CPU RAM ADDRESS	EEPROM ADDRESS	VALUE OF DATA
1	H • AMP TB1	EC	00	F3
2	GAIN SET	6E	01	88
3	CORE	E8	0F	03
4	H AMP TB2	6F	10	E6
5	FLAG 5 (WB)	AE	11	46
6	KEISHA	7F	1F	04
7	H • AMP TB3	7A	20	CD
8	H • AMP TB4	7B	21	B3
9	FLAG 2 (WB)	AD	25	14
10	FLAG 6	D2	26	3
11	FLAG • a (AWC)	D3	27	21
12	IRIS • AVERAGE	E5	28	20
13	IRIS • PEAK	E6	29	18
14	INTEGRAL • GAIN	FF	2A	21
15	IRIS • FIX • VALUE	FD	2B	6
16	ERROR • GAIN	FE	2C	40
17	DIS • AP	C4	2D	A5
18	CLIP • MAX	AA	2E	F0
19	FLAG 3 (WB)	CA	2F	CC
20	H • AMP TB6	F2	32	9F
21	AG • CNT1	F3	33	34
22	IRIS FLG	D1	34	40
23	H AMPTB (7)	F4	35	7B
24	AG • CNT2	F5	36	FF
25	ALC • AGC • MIN	F6	37	FF
26	H • AP • LIMT	FA	38	1D
27	H • AP • GC	FB	39	84
28	CHROMA • SLIP	FC	3A	AF
29	H AMP TB (8)	F7	3B	5C
30	HL GAIN	CE	3C	88
31	PEAK CLIP	CF	3D	FF
32	H AMP TB9	EF	3E	4F
33	H AMP TB5	D0	3F	0A
34	V • AP CLIP1	00	40	AA
35	V • AP CORE	01	41	22
36	H • AP CORE	02	42	22
37	HIGH • L • AP1	03	43	00
38	HIGH • L • AP2	05	44	06
39	HIGH • L • AP3	06	45	80
40	AP • G	C3	46	B4
41	C • G AP	13	47	20
42	C • G SET	14	48	79
43	H • GATE ST/P	00	49	19
44	H • GATE ED	01	4A	00
45	V • GATE ST	02	4B	30
46	V • GATE ED	03	4C	1E
47	H • GATE ST	04	4D	0C
48	SET	05	4E	EE
49	V • AP CORE	01	4F	22
50	PEDE • NOR	8A	50	12
51	PEDE • COR	8B	51	12
52	FLARE • ST	8C	52	50
53	FLARE • ED	8D	53	90
54	FLAG 4 (WB)	71	54	96
55	TIM CMP	B5	55	80
56	IRIS SET	6C	7B	44
57	ERROR TB CL	8E	7C	2C
58	ERROR TB OP	8F	7D	00
59	CENTRE ON/OFF	DC	7F	00
60				

Fig. C15

2. CONTROL VOLTAGE ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
PIN 22 OF B201	C292		
M. EQ.		**SPEC.**	
D.V.M		$1.5^{+0.3V}_{-0.1V}$	

3. V-SUB ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR203	NO	HALOGEN LAMP
M. EQ.		**SPEC.**	
MONITOR TV		NO BLOOMING	

(1) Zoom all the way in (Fully tele position) and aim the camera at the Halogen Lamp as shown in Fig. C16.

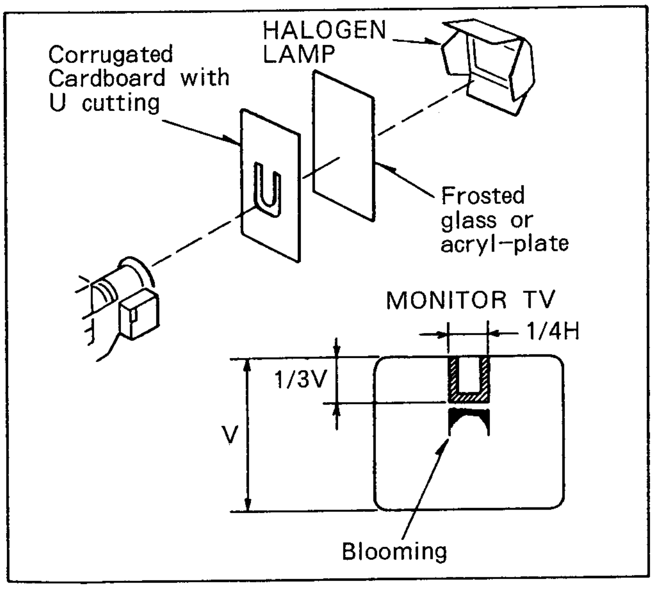

HALOGEN LAMP
Corrugated Cardboard with U cutting
Frosted glass or acryl-plate
MONITOR TV
1/4H
1/3V
V
Blooming

Fig. C16

(2) Set the High Speed Shutter SW to "OFF" portion.
(3) Blind the lighting using frosted glass or acryl plate to diffuse incoming light.
And also put a corrugated carboard which inside is cut to "U" shape as shown in Fig.C16.
(4) Adjsut VR203 so that blooming is just disappear.
(If blooming is not disappeared complately, adjsut until minimum blooming).
(5) High Speed Shutter "ON" and "OFF" both mode, confirm that the monitored picture does not contain the Blooming even if the camera moves as shown in Fig. C17.

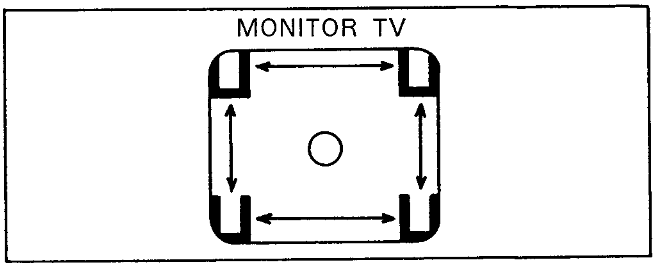


Fig. C17

4. FOCUS ENCODER ADJUSTMENT

Note 1:
Before performing this adjustment, check the "Back Focus".
If Back Focus is not correct, adjust this Focus Encoder adjustment.
(Refer to Note 2) Unless there is back focus problem, do not touch this focus encoder.
This adjustment is very critical.

(1) Set the Focus switch to "MANUAL"
(2) Check the back focus. (Refer to Note 2)
If it is correct, there is no need to adjust this.
(3) Set the zoom position to fully TELE side.
Focus the lens with far object (more than 10m).
(4) Loose the screw (A).
Move the Focus Encoder C.B.A. so that voltage of centre of connector (B) becomes 2.2+−0.2V.
Then, tighten the screw (A).

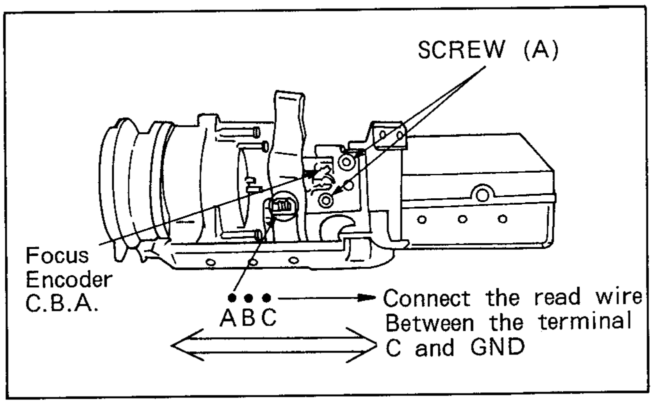

SCREW (A)
Focus Encoder C.B.A.
A B C
Connect the read wire Between the terminal C and GND

Fig. C18

(5) After adjustment of Focus Encoder, Check the "Back Focus".

5. ZOOM ENCODER ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP703 TP701	VR709 VR710	NO	Far Object: 10m Near Object: 1m
M. EQ.		**SPEC.**	
D.V.M		To be Calculated	

Precise Adjustment for Zoom Encoder

According to number which is mentioned on lens unit, calculate the voltage to be supplied the both side of zoom Encoder.
And Adjust its according to Result of calculation.

<Pre–Adjustment>

(1) Calculate the V.REF(+), V.REF(−) using the following formula.

TELE side
$V.REF(+)=V.REF3 + (V.REF3-V.REF1)\times(5-TV)/(VT-VW)$

WIDE side
$V.REF(-)=V.REF1 - (V.REF3-V.REF1)\times VW/(VT-VW)$

V.REF3 = Voltage at TP709 (Please measure it)
V.REF1 = Voltage at TP710 (Please measure it)
VT = which is mentioned on lens unit. (Bigger number)
VW = which is mentioned on lens unit. (Smaller number)
VA = Voltage of TP702 at wide position.
VB = Voltage of TP702 at Tele position.

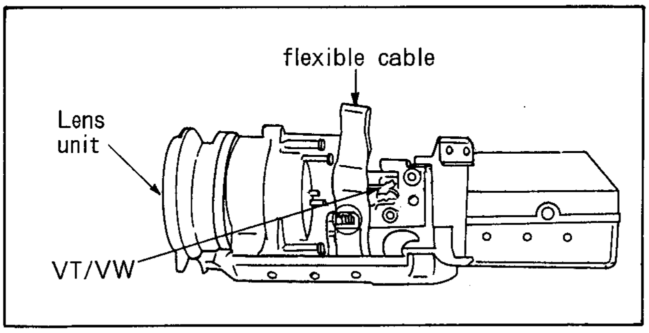


Fig. C19

(2) Adjust the VR709 so that Voltage at TP701 become VREF(+) same as a result of calculation.
(3) Adjsut the VR710 so that Voltage at TP703 become VREF(−) same as a result of calculation.

<Fine Adjustment>

(1) Calculate the following formula with measuring the each voltage and Take note the result.

* TELE side
$V.REF(+) = VB+(VB-(VA-0.024)\times(5-VT)/(VT-VW)$
* WIDE side
$V.REF(-) = (VA-0.024)-(VB-(VA-0.024)\times VW/(VT-VW)$

(2) Adjust the VR709 so that Voltage at TP701 become V.REF(+) Same as a result of calculation.
(3) Adjust the VR710 so that Voltage at TP703 become V.REF(−) Same as a result of calculation.

Note:
If VW and VT is not mentioned after replacing lens unit, use data VW=0.470V and VT=0.4676V. This value is rough value, so if those number are used,after you do this adjustment,confirm the back focus. and if back focus is not correct,perform simplified adjustment.

6. HOLE AMP ADJUSTMENT

TP	**ADJ.**	**LENS CAP**	**CHART**
TP707	**VR703** **VR704**	**NO**	
M. EQ.		**SPEC.**	
D.V.M.		**VOLTAGE TP707= VOLTAGE TP709** **VOLTAGE TP707= VOLTAGE TP710**	

1. Connect the jumper wire between TP751 and TP752. (ISIS Close)
2. Adjust the VR703 so that Voltage at TP707 equalize to Voltage at TP710.
3. Connect the jumper wire between TP751 and TP750. (IRIS open)
4. Adjust the VR704 so that Voltage at TP707 equalize to Voltage at TP709.

7. PWM ADJUSTMENT

TP	**ADJ.**	**LENS CAP**	**CHART**
TP707	**VR705**		
M. EQ.		**SPEC.**	
D.V.M			

1. Connect the jumper wire between TP751 and TP750 so that Set the IRIS open condition.
2. Adjust the VR705 so that Voltage at TP707 become Vref1+−50mV. (Vref1 = Voltage at TP709−500mV)
3. Close the Iris with jumper wire between TP751 and TP752.
4. Open the Iris with jumper wire between TP751 and TP750.
5. Adjust the VR705 so that Voltage at TP707 become Vref2+−20mV. (Vref2 = Voltage at TP709−140mV)

8. AFLC • OSC ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP711 TP714	C728	╳	╳
M. EQ.		**SPEC.**	
OSCILLOSCOPE		T=38μ±1μsec	

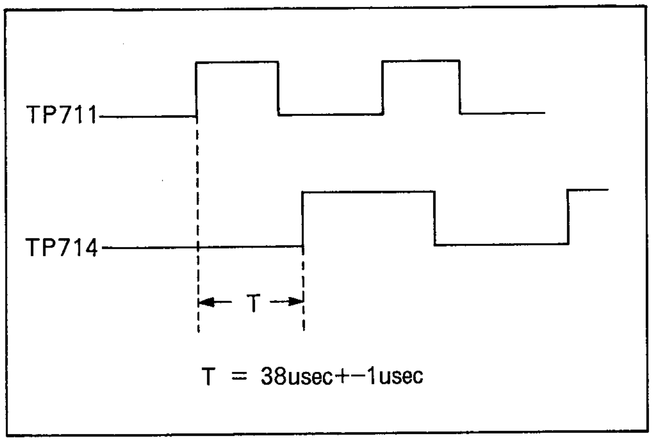

TP711
TP714
T
T = 38usec+–1usec

Fig. C20

9. PLL FREQUENCY ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP205	C220	╳	╳
M. EQ.		**SPEC.**	
FREQUENCY COUNTER		9.656250MHz±15Hz	

10. ØR BIAS ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP203	VR202	NO	J-CHART
M. EQ.		**SPEC.**	
OSCILLOSCOPE		V=LESS THAN 10mV	

1. Aim the camera at J–CHART.
2. Connect the Oscilloscope to TP203.
3. Adjust the VR202 so that "V" Level become Less than 10mV as shown Fig.C20.

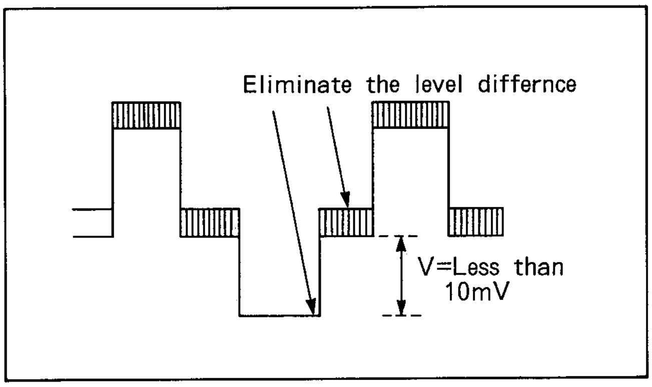

Eliminate the level differnce
V=Less than
10mV

Fig. C21

11. CDS GAIN ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP204 TP202	VR201	╳	GRAY SCALE CHART
M. EQ.		**SPEC.**	
OSCILLOSCOPE		300mV±10mV	

Note:
Regarding connection of EVR, refer to preparation and Initial setting.

1. Aim the camera to Gray Scale Chart.
2. Set the ALC adjustment so that waveform is 300mV+–10mV at TP204 (Refer to ALC ADJUSTMENT).
3. Connect the oscilloscope to TP202.
4. Adjust the VR201 so that signal level at TP202 becomes 300mV+–10mV.

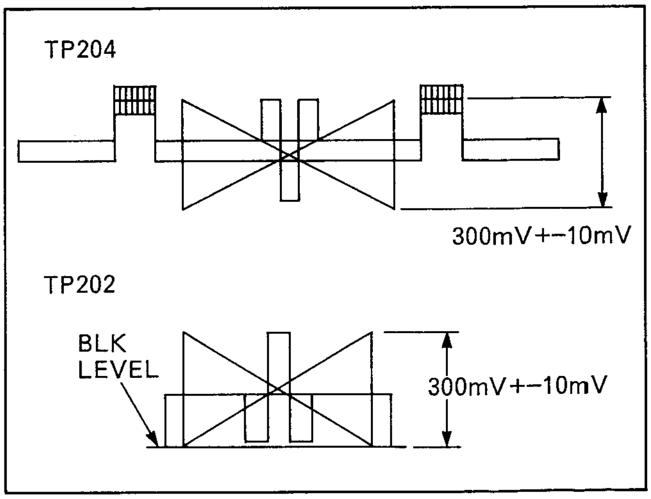

TP204
300mV+–10mV
TP202
BLK
LEVEL
300mV+–10mV

Fig. C22

12. LOW CLIP LEVEL ADJUSTMENT (1)

TP	ADJ.	LENS CAP	CHART
TP211	VR204	YES	
M. EQ.		SPEC.	
OSCILLOSCOPE		ELIMINATE THE LEVEL DIFFERENCE	

1. Cover the lens with LENS CAP or close the Iris.
2. Connect the Oscilloscope to TP211.
3. Adjust the VR204 so that level A becomes 0mV+-10mV. (Eliminate the level difference)

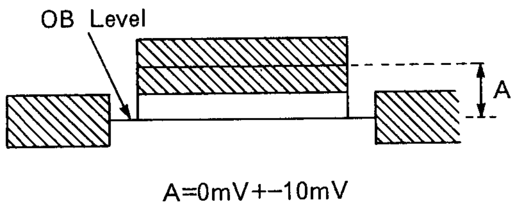


Fig. C23

13. AF BLANKING LEVEL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP720	VR712		
M. EQ.		SPEC.	
OSCILLOSCOPE		ELIMINATE THE LEVEL DIFFERENCE	

1. Cover the lens with LENS CAP or close the Iris.
2. Connect the Oscilloscope to TP720.
3. Adjust the VR712 so that level A becomes 0mV+-10mV. (Eliminate the level difference)

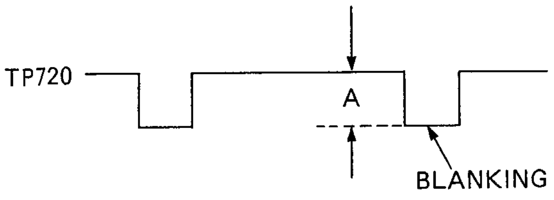
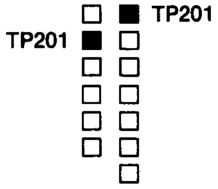


Fig. C24

14. AGC ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ
	CPU	EEPROM		
02	CO	22	GRAY SCALE CHART	OSCILLO-SCOPE
SPEC.			TP	
			TP204 TP201	
CONDITION			 TP ARRAY ON SENSOR C.B.A.	
*CDS GAIN ADJUSTMENT COMPLETE *ALC ADJUSTMENT SHOULD BE 300mV+-10mV				

Note:
Regarding the connection of EVR, refer to preparation and Initial setting.

1. Aim the Camera at Gray Scale Chart.
2. Connect the Oscilloscope to TP204.
3. Push "CMD" key, "0" and "8" keys.
4. Push "ADR" key, "D" and "E" keys.
5. Push "DATA" key, "0" and "5" keys.
6. Push "SET" key.
7. Push "ADR" key, "D" key, "D" key.
8. Push the "INC" key or "DEC" key so that Signal Level at TP204 becomes 300mV+-10mV.

* 1. To 8 are initial setting for AGC Adjustment.

9. Push "CMD", "0" and "8" keys.
10. Push "ADR", "0" and "0" keys.
11. Connect the Oscilloscope To TP201.
12. Push the "INC" key or "DEC" key so that Signal Level at TP204 becomes 400mV+-10mV.
13. Push "CMD", "0" and "2" keys.
14. Push "ADR", "2" and "2" keys.
15. Push "SET" keys.

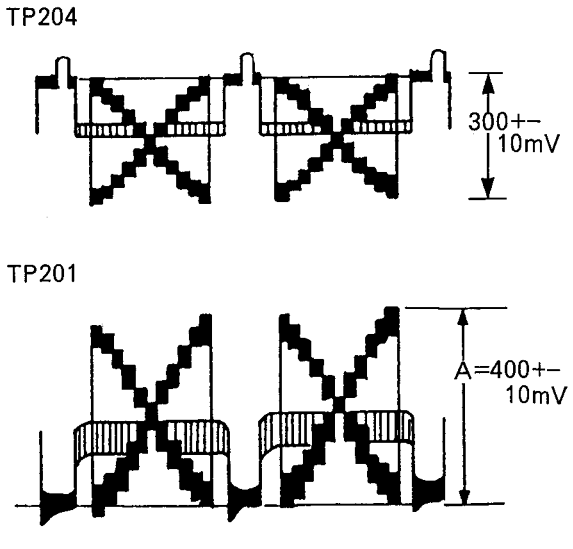


Fig. C25

15. A/D INPUT LEVEL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP211 TP204	VR706	NO	GRAY SCALE CHART
M. EQ.		SPEC.	
OSCILLOSCOPE		1.10V±50mV	

Note1:
Before this Adjustment, must to be complete. AGC Adjustment.
Note 2:
TP211,TP204 : SENSOR C.B.A.

1. Aim the camera at Gray Scale Chart.
2. Set the A/C Adjustment so that waveform is 300+–10mV at TP204 (Refer to AGC Adjustment 1 to 8).
3. Connect the Oscilloscope to TP211.
4. Adjust the VR706 so that waveform is 1.10v+–50mV at TP211.

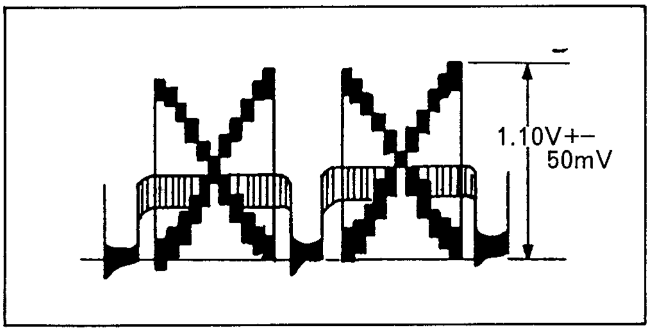
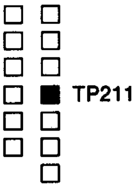


Fig. C26

16. ALC ADJUSTMENT (1)

CMD	ADDRESS		CHART	M. EQ
	CPU	EEPROM		
08			J-CHART	OSCILLO-SCOPE
SPEC.			TP	
			TP211	
CONDITION			 TP ARRAY ON SENSOR C.B.A.	
A/D INPUT LEVEL ADJUSTMENT COMPLETE				

1. Push "CMD", "0" and "8" keys.
2. Push "ADR", "6" and "2" keys.
3. Push "DATA", "F" and "F" keys.
4. Push "SET" key.
5. Aim the camera at J.CHART.
6. Connect the Oscilloscope to TP211, and check the Signal Level at TP211.

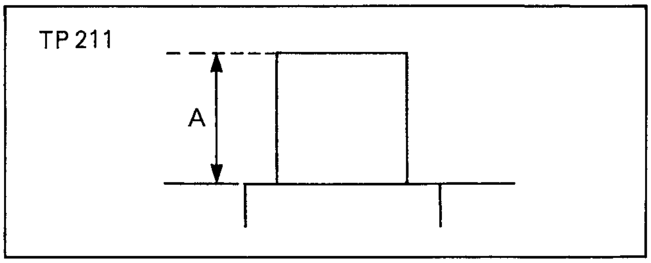


Fig. C27

7. Wire the Data to EEPROM According to Signal Level at TP211 as shown Fig.C27.

ADDRESS	EEPROM
	29
SIGNAL LEVEL AT TP211	WIRTE DATA
$1.45 \leqq A < 1.65$	18
$1.65 \leqq A < 1.75$	18
$1.75 \leqq A < 1.95$	10

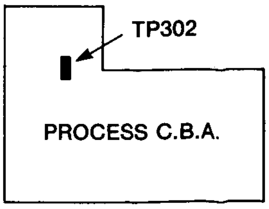
Fig. C28

EXAMPLE: A= 1.70

1) Push "CMD" key, "0" key and "2" keys.
2) Push "ADR" key, "2" key and "9" keys.
3) Push "DATA" key, "1" key and "8" keys.
4) Push "SET" key.

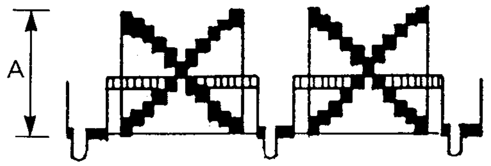
8. After Wtite the Data to EEPROM, Push the "SHIFT 1" and "1" keys together.

17. ALC ADJUSTMENT (2)

CMD	ADDRESS		CHART	M. EQ
	CPU	EEPROM		
08	FO	30	GRAY SCALE CHART	OSCILLO-SCOPE
SPEC.			TP	
1.1V±50mV			TP302	
CONDITION				
① CMD: 08 ADR: E6 DATA: 00 SET ② CMD: 0.8 ADR: E5 DATA: 00 SET				

Note:
Refer to preparation for connection of EVR.

1. Push "CMD", "0" and "8" keys.
2. Pudh "ADR", "E" and "6" keys.
3. Push "DATA", "0", "0" and "SET" keys.
4. Push "CMD", "0" abd "8" keys.
5. Push "ADR", "E" and "5" keys.
6. Push "DATA", "2", "0" and "SET" keys.
7. Push "CMD", "0" and "8" keys.
8. Push "ADR", "F" and "0" keys.
9. Aim the camera at Gray Scale Chart.
10. Connect the oscilloscope to TP302.
11. Push "INC" or "DEC" key so that waveform is 1.1V+-50mV.
12. Push "CMD", "0" and "2" keys.
13. Push "ADR", "3" and "0" keys.
14. Push "SET" key to write its adjusted data in EEPROM.



A=1.1V+-50mV

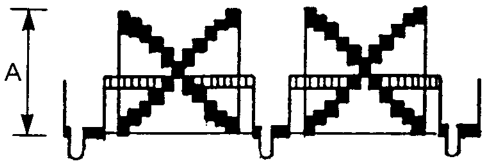
Fig. C29

18. ALC ADJUSTMENT (3)

CMD	ADDRESS		CHART	M. EQ
	CPU	EEPROM		
08	F1	31	GRAY SCALE CHART	OSCILLO-SCOPE
SPEC.			TP	
1.1V±50mV			TP302	
CONDITION			SAME AS ALC ADJUSTMENT (2)	
① CMD:08 ADR:E6 DATA:00 SET ② CMD:0.8 ADR:E5 DATA:00 SET				

Note:
Refer to preparation for connection of EVR.

1. Set the Adjustment condition as same as ALC Adjustment(2) 1 to 6.
   Prosecure of condition setting is same, But Data of Address "E6" Change from "00" to "20". Also Data of Address "E5" Change from "20" To "00".
2. Push "CMD", "0" and "8" keys.
3. Push "ADR", "F" and "1" keys.
4. Aim the camera at Gray Scale Chart.
5. Connect the Oscilloscope to TP302.
6. Push "INC" or "DEC" key so that waveform is 1.1v+-50mV.
7. Push "CMD", "0" and "2" keys.
8. Push "ADR", "3" and "1" keys.
9. Push "SET" key to wtite its adjusted data in EEPROM.



A=1.1V+-50mV

Fig. C30

19. Y LEVEL CLIP ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP310	VR313	NO	WHITE CHART
M. EQ.		SPEC.	
OSCILLOSCOPE		V/S=2.67±0.1	

Note:
TP310, VR313 : Process C.B.A.

1. Push "CMD", "0" and "8" keys.
2. Push "ADR", "7" and "5" keys.
3. Push "data", "F" and "F" keys.
4. Push "SET" key.
5. Push "CMD", "0" and "8" keys.
6. Push "ADR", "A" and "F" keys.
7. Push "DATA", "F" and "F" keys.
8. Push "SET" key.
9. Aim the camera at white chart.
10. Connect the Oscilloscope to TP310.
11. Adjust the VR313 so that ratio of V and S becomes 2.67+-0.1.

V/S=2.67+-0.1

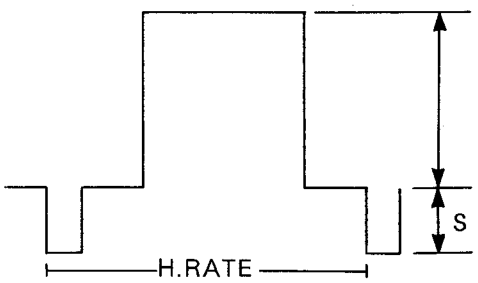
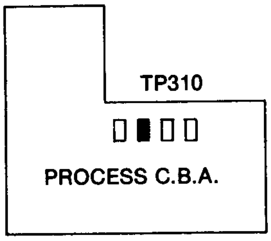


Fig. C31

20. V/S ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ
	CPU	EEPROM		
08	AF	08	GRAY SCALE CHART	OSCILLO-SCOPE
SPEC.			TP	
V/S=2.22±0.1			TP310	
CONDITION			 TP310 PROCESS C.B.A.	

1. Push "CMD", "0" and "8" keys.
2. Push "ADR", "A" and "F" keys.
3. Aim the camera at Gray Scale Chsrt.
4. Connect the Oscilloscope to TP310.
5. Push "INC" or "DEC" key so that ratio of V and S becomes 2.33+−0.1.
6. Push "CMD", "0" and "2" keys.
7. Push "ADR", "0" and "8" keys.
8. Push "SET" key.

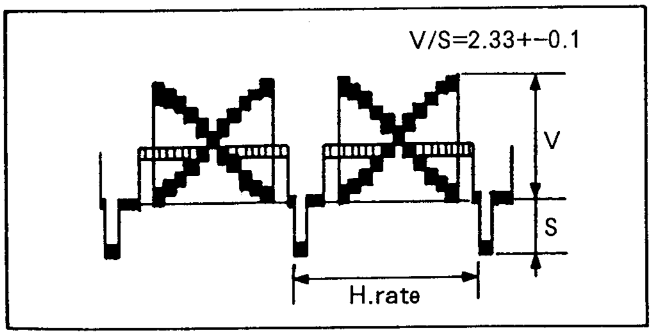


Fig. C32

21. AGC MAX GAIN ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ
	CPU	EEPROM		
	75	7E	GRAY SCALE CHART	OSCILLO-SCOPE
SPEC.			TP	
V/S=1.16±0.15			TP310	
CONDITION			SAME AS V/S ADJUSTMENT	

1. Push "CMD", "0" and "8" keys.
2. Push "ADR", "7" and "5" keys.
3. Aim the came at Gray Scale Chart.
4. Connect the Oscilloscope to TP310.
5. Push "INC" or "DEC" key so that ratio of V and S becomes 1.16+−0.15.
6. Push "CMD", "0" and "2" keys.
7. Push "ADR", "7" and "E" keys.
8. Push "SET" keys.

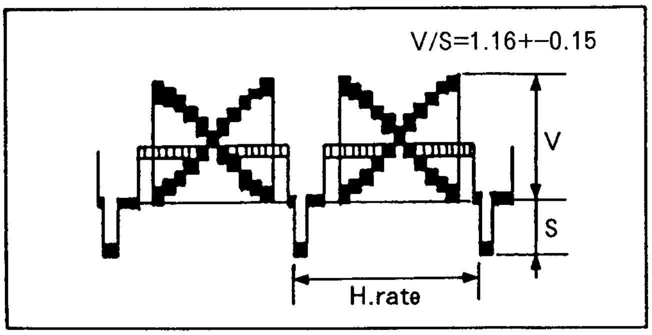


Fig. C33

22. LOW CLIP LEVEL ADJUSTMENT (2)

TP	ADJ.	LENS CAP	CHART
TP211	VR204	YES	
M. EQ.		SPEC.	
OSCILLOSCOPE		A=10mV±10mV	

1. Connect the Oscilloscope to TP211.
2. Adjust the VR204 so that "A" Level becomes 10mV+−10mV.

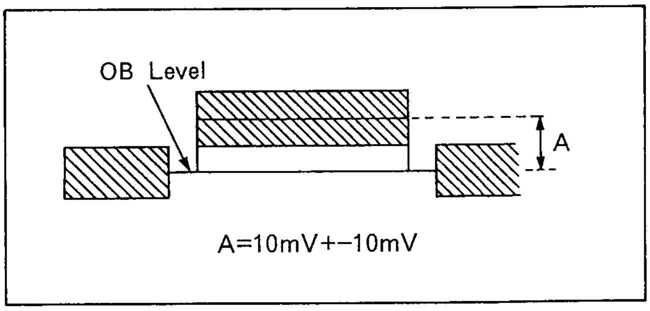


Fig. C34

23. INDOOR WHITE BALANCE ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ
	CPU RAM	EEPROM		
08 02	R-Y: A3 B-Y: A4	77 76	WHITE CHART	OSCILLOSCOPE or VECTORSCOPE

SPEC.	TP
CENTRE OF VECTORSCOPE	VIDEO OUT

CONDITION	
WHITE BALANCE: INDOOR	

Note:

Regarding the connection of EVR, refer to preparation.

1. Aim the camera at white chart. and Set the white Balance to "IN DOOR".
2. Connect the Video out to Vectorscope.
3. Set the command "08" by pushing "CMD", "0" and "8" keys.
4. Set the address "A3" (R–Y) by pushing "ADR", "A" and "3"keys.
5. Push the "INC" or "DEC" keys so that vector approaches to centre as much as possible.
6. When best point comes, Set the command "02" by Pushing "CMD", "0" and "2" keys.
7. Set the address "79" by pushing "ADR", "7" and "9" keys.
8. Push "SET" key.
9. Set command "08" by pushing "CMD", "0" and "8" keys.
10. Change address to "A4", (B–Y) by pushing "ADR", "A" and "4" keys.
11. Adjust the data by pushing "INC" or "DEC" key so that vector approches to centre as much as possible.
12. When best point comes, Set the command "02" by pushing "CMD", "0" and "2" keys.
13. Change address to "78" by pushing "ADR", "7" and "8" keys.
14. Push "SET" key.
15. Repeat 3. to 14. until vector comes to center.

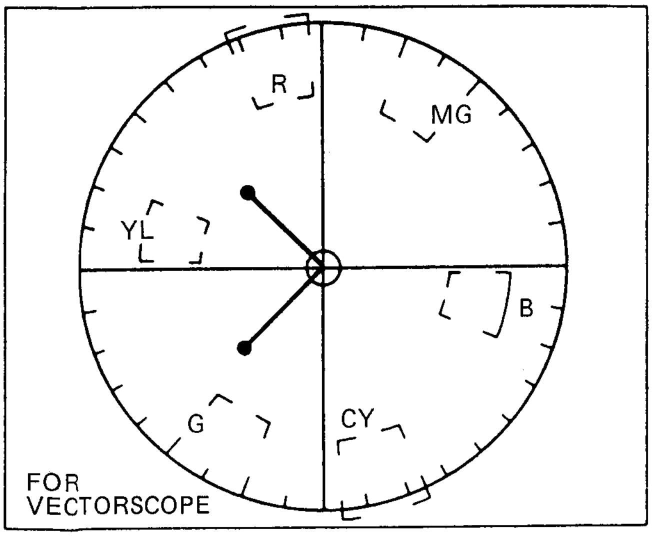


Fig. C35

24. COLOUR PHASE AND GAIN ADJUSTMENT (INDOOR)

CMD	ADDRESS		CHART	M. EQ
	CPU RAM	EEPROM		
08 02	BB, BC (PHASE) B2, B3 (GAIN)	0D, 1D (PHASE) 06, 16 (GAIN)	COLOUR CHIP CHART	VECTOR SCOPE

SPEC.	TP
RED: 103+ –7 degree/PHASE 103+ –15%/GAIN YEL: 165+ –0 degree/PHASE 193+ –10%/GAIN	VIDEO OUT

Note:

Regarding the connection of EVR, refer to preparation (Fig. C6) and Initial setting.

1. Aim the camera at colour chip chart.
2. Connect the video output to vectorscope.
3. Set the command to "08" by pushing the "CMD" key, "0" key and "8" key.
4. Set the address to "BB" (R–Y Phase) by pushing the "ADR" key, "B" key and "B" key.
5. Push the "INC" or "DEC" key so that phase of Red and yellow Vector approach to the spec.
6. When best point comes, Set the command to "02" by Pushing the "CMD" key, "0" key and "2" key.
7. Set the address to "0D" by pushing the "ADR" key, "D" key and "E" key.
8. Push the "SET" key.
9. Change the command to "08", and change the address to "BC" (Same procesures as 3, 4).
10. Push the "INC" key or "DEC" key so that phase of Red and Yellow vector approach to the spec.
11. When best point comes, change the command to "02", and change the address to "1D" (Same procedures as 3, 4).
12. Push the "SET" key.
13. Change the command to "08" and change the address to "B2" (R–Y GC) (same procesures as 3, 4).
14. Push the "INC" key or "DEC" key so that gain of Red and Yellow vector approach to the spec.
15. When best point comes, change the command to "02" and change the address to "06". (Same procedures as 3, 4)
16. Push the "SET" key.
17. Change the command to "08" and change the address "B2" (B–Y GC) (Same procedures as 3, 4).
18. Push the "INC" key or "DEC" key so that gain of Red and Yellow vector approach to the spec.
19. When best point comes, change the command to "02" and change the address to "16" (Same procedures as 3, 4).
20. Push the "SET" key.
21. Repeat the 3 to 20 until vectors become within spec as shown Fig.C36.

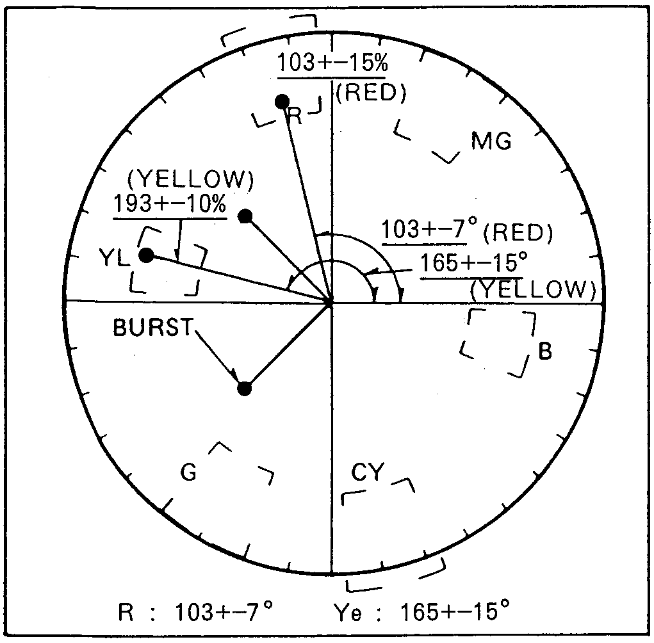


Fig. C36

25. OUTDOOR WHITE BALANCE ADJUSTMENT

CMD	ADDRESS		CHART	M. EQ
	CPU RAM	EEPROM		
08 02	A3 (R-Y) A4 (B-Y)	71 (R-Y) 70 (B-Y)	WHITE CHART	VECTOR-SCOPE OR OSCILLO-SCOPE

SPEC.	TP
VECTOR COMES CENTRE OR WAVEFORM IS MINIMIZED	VIDEO OUT

CONDITION	
WHITE BALANCE: OUTDOOR IRIS VR: CENTRE COLOUR TEMPERATURE CONVERSION FILTER: VFK0324	

Note:

Regarding the connection of EVR, refer to Preparation and Initial setting.

1. Set the white balance switch to "OUT DOOR".
2. Aim the camera at white chart.
3. Connect the video out to vectorscope or oscilloscope.
4. Cover the lens with colour temperature conversion filter VFK0324 TO imitate the outdoor lighting.
5. Set the command "08" by pushing "CMD", "0" and "8" keys.
6. Set the address "A3" by pushing "ADR", "A" and "3" keys.
7. Push the "INC" or "DEC" key so that vector approaches to centre as much as possible.
8. When best point comes, Set the command "02" by pushing "CMD", "0" and "2" keys.
   And change the address to "71" by pushing "ADR", "7" and "1" keys. (Do not change the data)
   Then push the "SET" key to write its adjusted data to EEPROM Directly.
9. Change command to "08" and change the address to "A4" (B–Y) (Same procedures as 5, 7).
10. Push the "INC" or "DEC" key so that vector approaches to center, as much as possible.
11. When best point comes, Set the command, "02" by pushing "CMD", "0" and "2" keys.
    And change the address to "70" by pushing "ADR", "7" and "0" keys. (Do not chnge the data.)
    Then push the "SET" key to write its adjusted data to EEPROM dilectly.
12. Repeat 4. to 11. until vector comes centre.

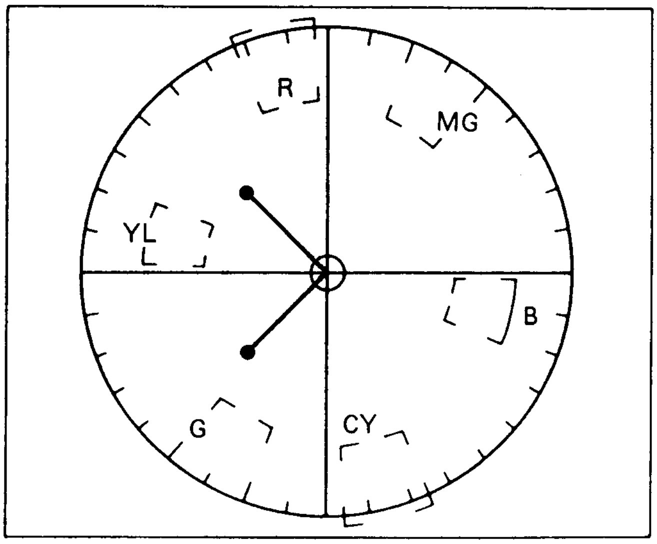


Fig. C37

26. COLOUR PHASE AND GAIN ADJUSTMENT (OUTDOOR)

CMD	ADDRESS		CHART	M. EQ
	CPU RAM	EEPROM		
08 02	BB, BC (PHASE) B2, B3 (GAIN)	0A, 1A (PHASE) 03, 13 (GAIN)	COLOUR CHIP CHART	VIDEO OUT

M. EQ.	SPEC.
VECTORSCOPE	RED: 103+–7 degree/PHASE 103+–15%/GAIN YEL: 165+–15 degree/PHASE 193+–10%/GAIN

Note:

Regarding the connection of EVR, refer to Preparation (Fig. C6) and Initial setting.

1. Aim the camera at colour chip chart. and cover the lens with colour temperature conversion filter VFK0324.
2. Connect the video output to vectorscope.
3. Set the command to "08" by pushing the "CMD" key, "0" key and "8" key.

4. Set the address to "BB" (R−Y PHASE) by pushing the "ADR" key, "B" key and"B" key.
5. Push the "INC" key or "DEC" key so that phase of Red and Yellow vectors approach to spec.
6. When best point comes, change the command to "02" by pushing "CMD" key, "0" key and "2" key and change the address to "0A" by pushing the "ADR" key, "0" key and "A" key (Do not change the data) and then push the "SET" key to write its adjusted data into EEPROM directly.
7. Chnge the command to "08" by pushing the "CMD" key, "0" key and "2" key.
   Change the address to "BC" by pushing the "ADR" key, "B" key and "C" key.
8. Push the "INC" key or "DEC" key so that phase of Red and Yellow vectors approach to the spec.
9. When best point comes change the command to "02" by pushing the "CMD" key, "0" key and "2" key. (Do not change the data), and change the address to "1A" by pushing "ADR" key, "1" key and "A" key.
   Then, Push the "SET" key to write its adjusted data to EEPROM Directly.
10. Change the command to "08" by pushing the "CMD" key "0" key and "8" key. Change the address to to "B2" (R−Y Gain) by pushing "ADR" key, "B" key and "2" key.
11. Push the "INC" or "DEC" key so that gain of Red and Yellow vectors approach to the spec.
12. When best point comes, change the command to "02" and change the address to "03" while keeping the data.
    Then, Push the "SET" key to write its adjusted data to EEPROM directly.
13. Change the command to "08".
    Change the address to "B3" (B−Y Gain).
14. Push the "INC" or "DEC" key so that gain of Red and Yellow vectors approach to the spec.
15. When the best point comes, change the command to "02" and change the address to "13" (do not change the dara). Then, Push the "SET" key to write adjusted data to EEPROM directly.
16. Repeat the 3. to 15. until vectors become within spec as shown in Fig. C38.

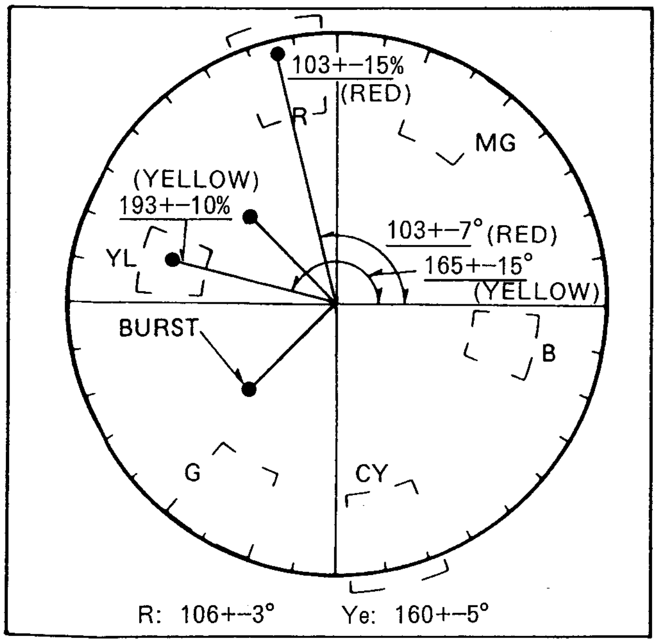


Fig. C38

27. DATA WRITING FOR COLOUR REPRODUCTION

As stated before, each adjustment voltage are memorized in EEPROM as digital data.
Regarding colour reproduction adjustments such as white balance, phase and gain adjustments, only adjustments have been performed at indoor condition (3200 degree kelvin) and outdoor condition (5100 degree kelvin).
EEPROM needs the data at other condition, too such as data at 3600 degree kelvin, 4500 dagree kelvin and 6000 degree kelvin.
In order to fulfill the entering rest of these data, following calculation have to be done and result must be entered to proper address of EEPROM.

(How to calculate and enter the data)

1) Read the data from proper address of EEPROM, which is indicated in following formula column.
2) The data which is read out is hexadecimal number, therefore, this must be converted to decimal number. You can do it easily using hexadecimal/decimal conversion table. (Fig. C12).
3) Substitute the read out data in to formula and calculate it.
4) Convert the result of calculation to hexadecimal value using conversion table.
5) Enter the result to EEPROM address.
   Item shows the contents of adjustment address, for example, R−Y WB 36 means R−Y white Balance at 3600 degree kelvin.

(For example)

ITEM FORMULA R−Y GC 36 05

ADR06+0.526×(ADR03−ADR06)

EEPROM
ADDRESS

1) Read out the data
   ADR06: Set the command to "04".
   Set the address to "06".
   Push the "SET" button.
   Number which is indicated in "DATA" LED is a data of ADR06(Address "06") for example, if indicated data is "56", substitute "56" to ADR06.
   As the same way, read out the data from address "03".
   For example, if data which are read out are ADR03="6C", ADR06="56" above formula becomes : R−Y WB 28 = 56+0.526(6C−56).
2) Convert the hexadecimal data into decimal number using conversion table. For example, "56" in hexadecimal is "86" in decimal from intersection of 5 and 6.
   Substitute its to formula.
   Therefore,
   R−Y GC 36 = 86+0.526×(108−86)
   = 86+0.526×22
   = 97 cut off the fractions.
3) Convert the result "97" to hexadecimal using conversion table (Fig. C12).
   "97" decimal is "61" in hexadecim.
   Write the "61" into EEPROM address "05".
   * Set the command to "02".
   * Set the address to "05".
   * Set the data "5A".
   * Push the "SET" key.

Calculate all following formula and write these result into proper EEPROM address.

NO.	ITEM	EEPROM ADDRESS	RESULT OF CALCULATION	FORMULA
1	R-Y WB 28	79		ADR 77−0.32×(ADR 77−ADR 71)
2	R-Y WB 36	75		ADR 77−0.285×(ADR 77−ADR 71)
3	R-Y WB 45	73		ADR 77−0.969×(ADR 77−ADR 71)
4	R-Y WB 60	6F		ADR 77−1.08×(ADR 77−ADR 71)
5	R-Y GC 28	07		ADR 06
6	R-Y GC 36	05		ADR 06+0.389×(ADR 03−ADR 06)
7	R-Y GC 45	04		ADR 06+0.902×(ADR 03−ADR 06)
8	R-Y GC 60	02		ADR 06+1.0×(ADR 03−ADR 06)
9	R-Y MAT 28	0E		ADR 0D
10	R-Y MAT 36	0C		ADR 0D+0.112×(ADR 0A−ADR 0D)
11	R-Y MAT 45	0B		ADR 0D+0.432×(ADR 0A−ADR 0D)
12	R-Y MAT 60	09		ADR 0D+1.0×(ADR 0A−ADR 0D)
13	B-Y WB 28	78		ADR 76−0.151×(ADR 76−ADR 70)
14	B-Y WB 36	74		ADR 76−0.169×(ADR 76−ADR 70)
15	B-Y WB 45	72		ADR 76−0.522×(ADR 76−ADR 70)
16	B-Y WB 60	6E		ADR 76−1.0×(ADR 76−ADR 70)
17	B-Y GC 28	17		ADR 16
18	B-Y GC 36	15		ADR 16−0.628×(ADR 16−ADR 13)
19	B-Y GC 45	14		ADR 16−1.146×(ADR 16−ADR 13)
20	B-Y GC 60	12		ADR 16−1.0×(ADR 16−ADR 13)
21	B-Y MAT 28	1E		ADR 1D
22	B-Y MAT 36	1C		ADR 1D+0.854×(ADR 1A−ADR 1D)
23	B-Y MAT 45	1B		ADR 1D+1.344×(ADR 1A−ADR 1D)
24	B-Y MAT 60	19		ADR 1D+1.0×(ADR 1A−ADR 1D)

Fig. C39 Calculation for Color Reproduction

28. AWB DATA SETTING

(How to dalculate and enter the data)

1) Read the data from proper address of EEPROM, which is indicated in following formula column.
2) The data which is read out is hexadecimal number, therefore, this must be converted to decimal number. You can do it easily using hexadecimal/decimal conversion table. (Fig. C12)
3) Substitute the read out data in to formula and calculate it.
4) Convert the result of calculation to hexadecimal value using conversion table.
5) Enter the result to EEPROM address.
Item shows the contents of adjustment address, for example, BH28 means at 2800 degree kelvin.

(For example)

ITEM FORMULA BH28 6B

ADR76+1.273×(ADR76−ADR70)

EEPROM
ADDRESS

1) Read out the data.
ADR76: Set the command to "04".
Set the address to "76".
Push the "SET" button.
Number which is indicated in "DARA" LED is a data of ADR76(Address "76") for example, if indicated data is "50", substitute "50" to ADR76.
As the same way, read out the data from addres "70".
For example, if data which are read out are ADR70="50", ADR76="6E" above formula becomes : BH28 = 6E+1.273×(6E−50).
2) Convert the hexadecimal data into decimal number using conversion table (Fig. C12). For example, "50" in hexadecimal is "80" in decimal from intersection of 5 and 0.
Subsititute its to formula.
Therefore,
BH28 = 110+1.273×(110−80)
= 110+1.273×30
= 146.9 cut off the fractions.
3) Convert the result "146" to hexadecimal using conversion table (Fig. C12).
"146" decimal is "92" in hexadecimal.
Write the "92" into EEPROM address "76".
* Set the command to "02".
* Set the address to "76".
* Set the data "92".
* Push the "SET" key.

NO.	ITEM	EEPROM ADDRESS	RESULT OF CALCULATION	FORMULA
1	BH 28	6B		ADR 76+1.273×(ADR 76−ADR 70)
2	BH 30	67		ADR 76+0.105×(ADR 76−ADR 70)
3	BH 36	63		ADR 76−0.065×(ADR 76−ADR 70)
4	BH 45	5F		ADR 76−0.315×(ADR 76−ADR 70)
5	BH 51	5B		ADR 76−0.71×(ADR 76−ADR 70)
6	BH 60	57		ADR 76−1.212×(ADR 76−ADR 70)
7	BL 28	6A		ADR 76−0.032×(ADR 76−ADR 70)
8	BL 30	66		ADR 76−0.226×(ADR 76−ADR 70)
9	BL 36	62		ADR 76−0.395×(ADR 76−ADR 70)
10	BL 45	5E		ADR 76−0.774×(ADR 76−ADR 70)
11	BL 51	5A		ADR 76−1.273×(ADR 76−ADR 70)
12	BL 60	56		ADR 76−2.030×(ADR 76−ADR 70)
13	RH 28	6D		ADR 79+1.320×(ADR 77−ADR 71)
14	RH 30	69		ADR 77+0.52×(ADR 77−ADR 71)
15	RH 36	65		ADR 75+0.281×(ADR 77−ADR 71)
16	RH 45	61		ADR 75−0.624×(ADR 75−ADR 73)
17	RH 51	5D		ADR 71+0.375×(ADR 77−ADR 71)
18	RH 60	59		ADR 6F+0.16×(ADR 77−ADR 71)
19	RL 28	66		ADR 79−0.219×(ADR 77−ADR 71)
20	RL 30	68		ADR 77+0.313×(ADR 77−ADR 71)
21	RL 36	64		ADR 75−0.682×(ADR 75−ADR 73)
22	RL 45	50		ADR 73−0.44×(ADR 77−ADR 71)
23	RL 51	5C		ADR 71−0.72×(ADR 77−ADR 71)
24	RL 60	58		ADR 6F−0.76×(ADR 77−ADR 71)

Fig. C40

ELECTRICAL ADJUSTMENT FOR E.V.F. SECTION

The following adjustments are for Electronic Viewfinder.

(1) Connect the Viewfinder plug to the E.V.F. connector on the unit.
(2) The camera circuit must be completely aligned before viewfinder adjustments are made.

1. H-OSC ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
Pin 7 of B801	VR802	NO	BALL CHART
M. EQ.		SPEC.	
FREQUENCY COUNTER		15.9±0.1kHz	

Note:
B801, VR802 : E.V.F. C.B.A.

(1) Connect the scope to Pin C.B.A. of B801, use DC.
(2) Adjust the H-OSC (VR802) so that the frequency is 15.9+-0.1KHZ.

2. CENTERING ADJUSTMENT

(1) Aim the camera at the registration chart.
(2) Adjust the Deflection Yoke Centering. Magnets by turning them so that the picture on monitor TV is centered.

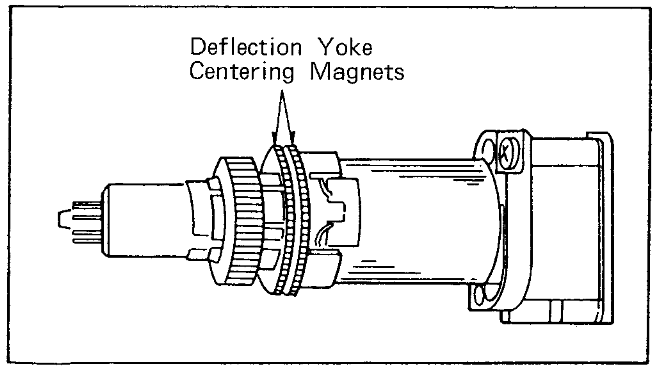

Deflection Yoke
Centering Magnets

Fig. C41

3. FOCUS ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR803	NO	BALL CHART
M. EQ.		SPEC.	
VIEWFINDER		BEST RESOLUTION	

Note:
VR803 : E.V.F. C.B.A.

(1) Aim the camera at the Ball chart.
(2) Adjust the focus control (VR803) for best resolution in the viewfinder.

4. V. SIZE ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR801	NO	GRAY SCALE CHART
M. EQ.		SPEC.	
VIEWFINDER		VERTICAL SIZE IS FIXED	

Note:
VR801 : E.V.F. C.B.A.

(1) Aim the camera at the gray scale chart.
(2) Adjsut the Vertical Size (VR801) so the Vertical Size is correct and the picture does not roll as shown in Fig.C42.

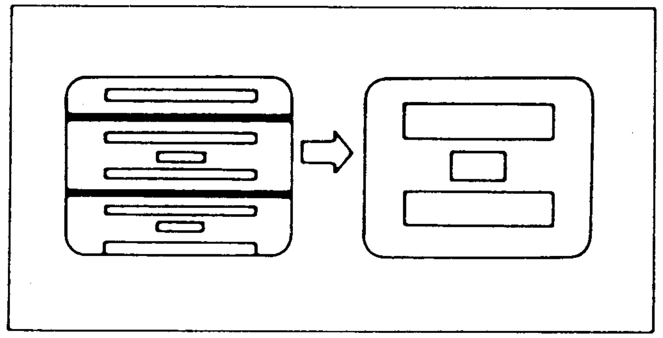


Fig. C42

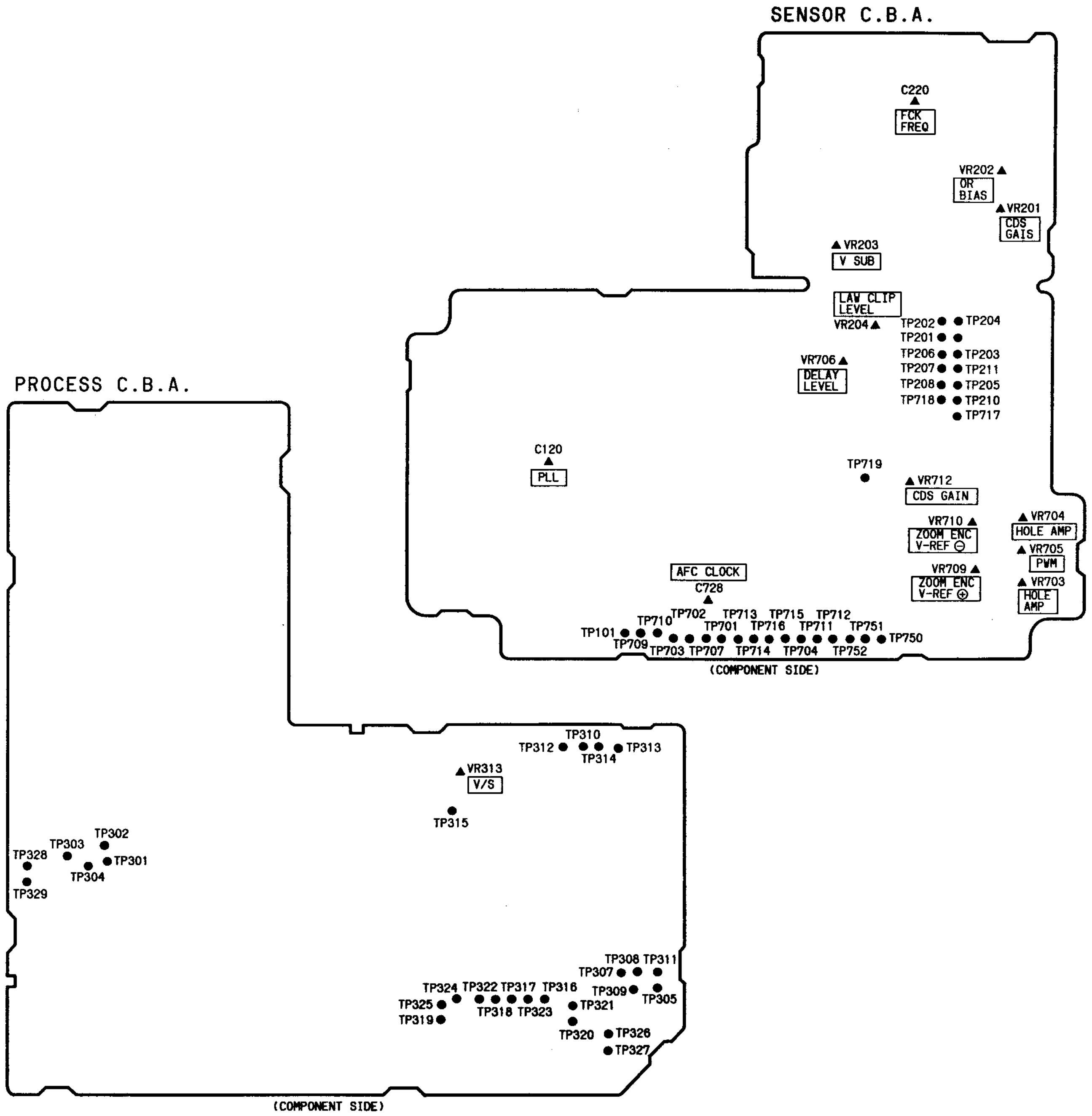
5. BRIGHTNESS ADJUSTMENT

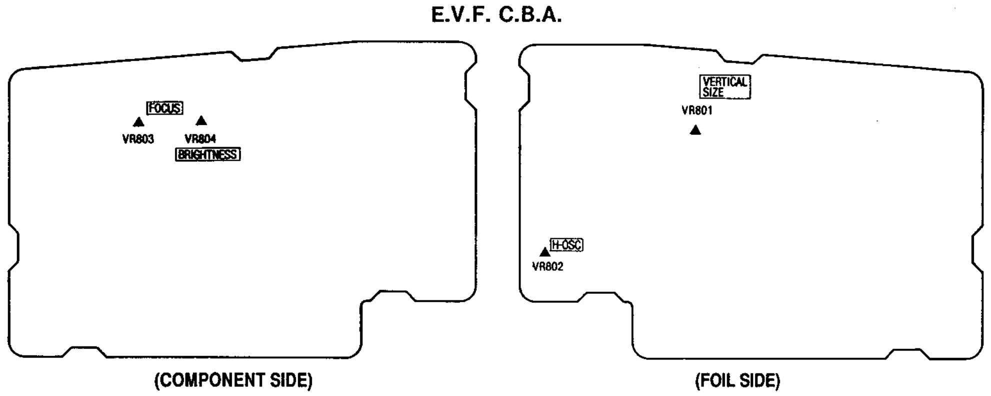
TP	ADJ.	LENS CAP	CHART
	VR804	NO	GRAY SCALE CHART
M. EQ.		SPEC.	
VIEWFINDER		NATURAL GRADATION	

Note:
VR804 : E.V.F. C.B.A.

(1) Aim the camera at gray cale chart.
(2) Adjust the brightness control (VR804) so that the black and white bars in the EVF screen are the same as they are in the monitor TV screen.

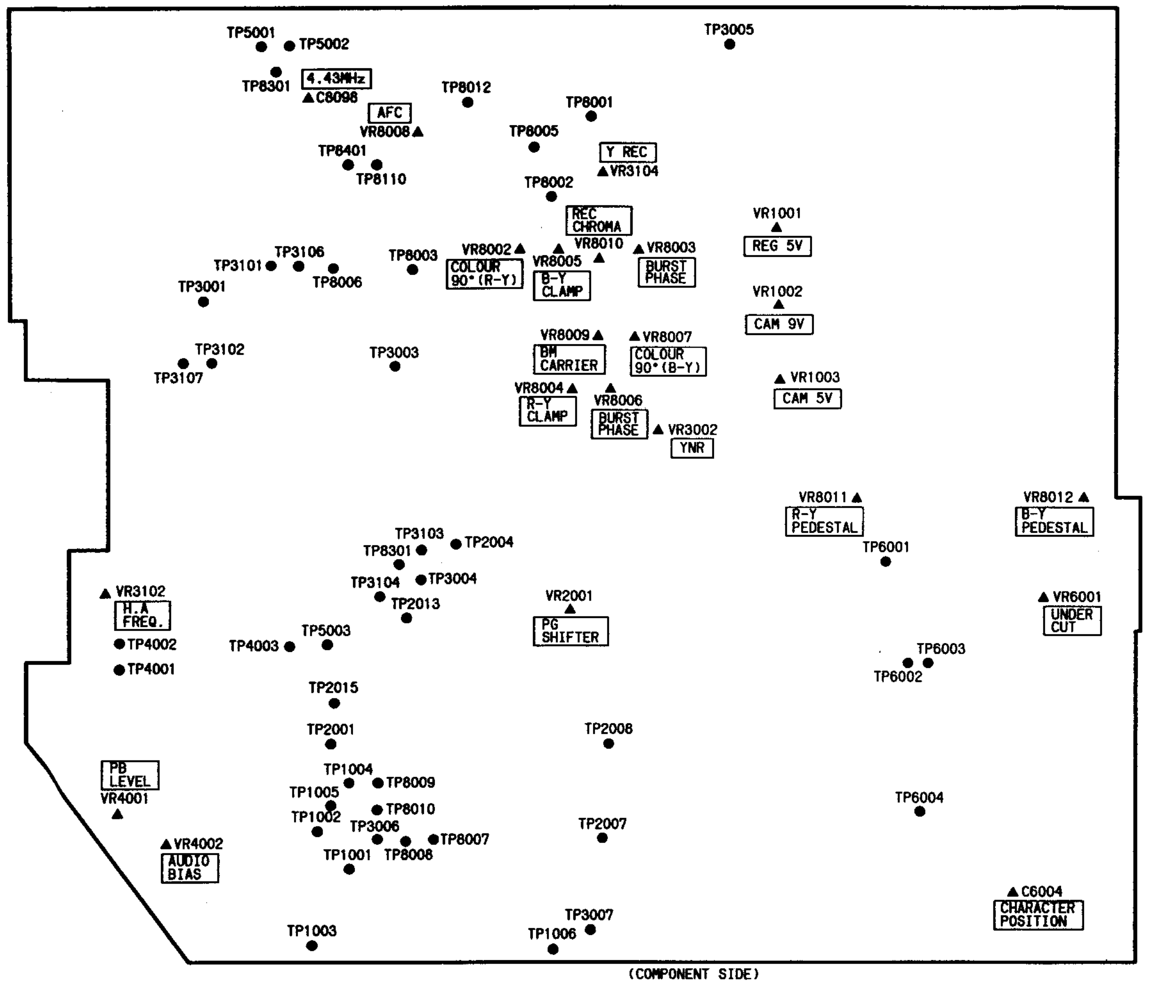
LOCATION OF TEST POINTS & CONTROLS (1)


SENSOR C.B.A.
C220
FCK FREQ
VR202
OR BIAS
VR201
CDS GAIS
VR203
V SUB
LAW CLIP LEVEL
VR204
TP202
TP204
TP201
TP206
TP203
TP207
TP211
TP208
TP205
TP718
TP210
TP717
VR706
DELAY LEVEL
C120
PLL
TP719
VR712
CDS GAIN
VR710
ZOOM ENC V-REF ⊖
VR704
HOLE AMP
VR705
PWM
VR709
ZOOM ENC V-REF ⊕
VR703
HOLE AMP
AFC CLOCK
C728
TP101
TP710
TP709
TP702
TP701
TP703
TP707
TP713
TP716
TP714
TP715
TP711
TP704
TP712
TP751
TP752
TP750
(COMPONENT SIDE)
PROCESS C.B.A.
TP310
TP312
TP313
TP314
VR313
V/S
TP315
TP302
TP303
TP328
TP301
TP304
TP329
TP308
TP311
TP307
TP324
TP322
TP317
TP316
TP309
TP325
TP305
TP318
TP323
TP321
TP319
TP320
TP326
TP327
(COMPONENT SIDE)

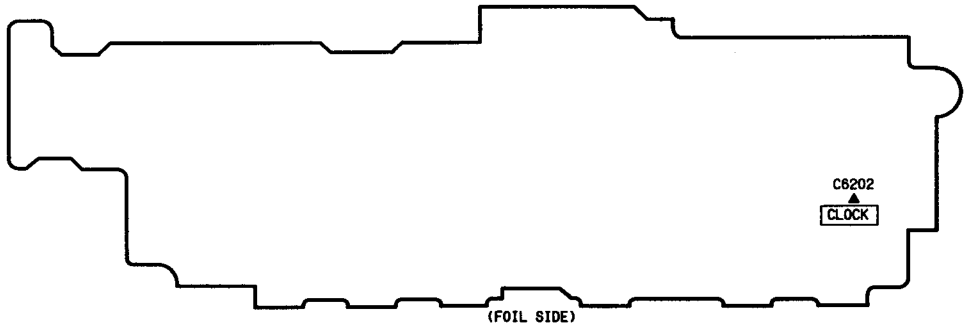

E.V.F. C.B.A.
FOCUS
VR803
VR804
BRIGHTNESS
VERTICAL SIZE
VR801
H-OSC
VR802
(COMPONENT SIDE)
(FOIL SIDE)

LOCATION OF TEST POINTS & CONTROLS (2)

MAIN C.B.A.


TP5001
TP5002
TP8301
4.43MHz
C8098
AFC
VR8008
TP8012
TP8001
TP8005
Y REC
VR3104
TP8401
TP8110
TP8002
REC CHROMA
VR8010
VR1001
REG 5V
TP3106
TP3101
TP8003
VR8002
COLOUR 90°(R-Y)
VR8005
B-Y CLAMP
VR8003
BURST PHASE
TP3001
TP8006
VR1002
CAM 9V
VR8009
BM CARRIER
VR8007
COLOUR 90°(B-Y)
TP3102
TP3107
TP3003
VR1003
CAM 5V
VR8004
R-Y CLAMP
VR8006
BURST PHASE
VR3002
YNR
VR8011
R-Y PEDESTAL
VR8012
B-Y PEDESTAL
TP6001
TP3103
TP8301
TP2004
TP3104
TP3004
TP2013
VR3102
H.A FREQ.
VR2001
PG SHIFTER
VR6001
UNDER CUT
TP5003
TP4003
TP4002
TP4001
TP6003
TP6002
TP2015
TP2001
TP2008
PB LEVEL
VR4001
TP1004
TP8009
TP1005
TP8010
TP1002
TP3006
TP6004
TP2007
VR4002
AUDIO BIAS
TP8007
TP1001
TP8008
C6004
CHARACTER POSITION
TP3007
TP1003
TP1006
(COMPONENT SIDE)

VTR OPERATION C.B.A.


C6202
CLOCK
(FOIL SIDE)

2-6-2. ELECTRICAL ADJUSTMENT FOR VTR SECTION

TEST EQUIPMENT AND TOOLS

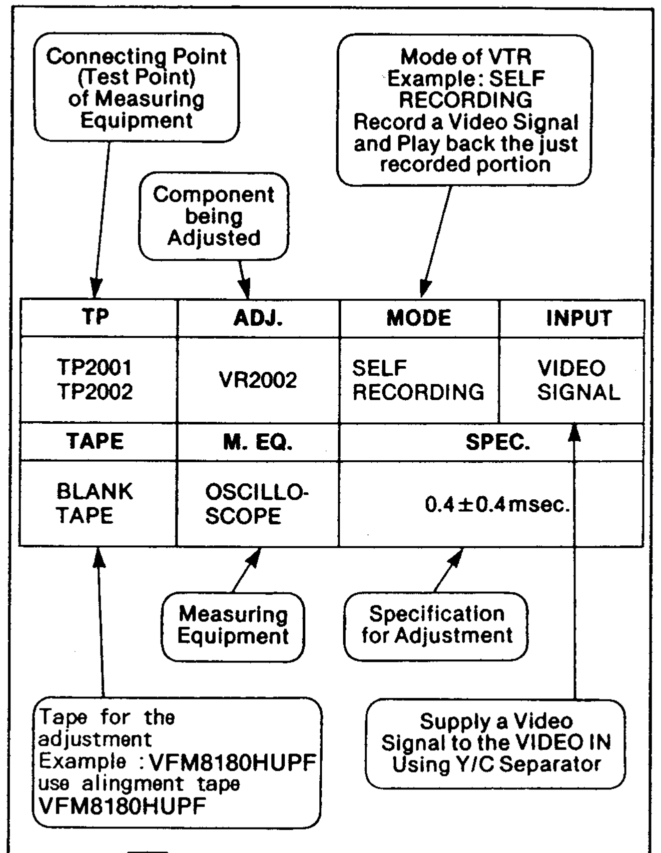
The following equipment is required for adjustment of the VTR section of S-VHS-C Movie.

1. VTVM (Vacuum Tube Volt Meter)
   DVM (Digital Volt Meter)
   Voltage Range : 0.01~50V
2. Dual Trace Oscilloscope
   Voltage Range : 0.06~50V/div
   Frequency Range : 0~50MHz
   Probe : 10:1 or 1:1
3. Frequency counter
   Frequency Range : 0~10MHz
4. Signal Generator (Sinewave)
   Frequency Range : 0~10MHz
5. Video Sweep Generator
   Frequency Range : 0~10MHz
6. Colour Monitor TV
7. Plastic Tip Driver
8. VHS-C Alignment Tape
9. S-VHS-C Blank Tape
10. VHS-C Blank Tape
11. Pattern Generator
12. Vectorscope

PREPARATION

1. Remove the casing panels
   (Refer to the disassemble method)
2. Connect the extension cable if necessary.
   VFK0668
   VFK0669
   VFK0670
   VFK0671

HOW TO READ THE ADJUSTMENT PROCEDURES


Connecting Point (Test Point) of Measuring Equipment
Component being Adjusted
Mode of VTR Example: SELF RECORDING Record a Video Signal and Play back the just recorded portion
Measuring Equipment
Specification for Adjustment
Tape for the adjustment Example : VFM8180HUPF use alingment tape VFM8180HUPF
Supply a Video Signal to the VIDEO IN Using Y/C Separator

TP	ADJ.	MODE	INPUT
TP2001 TP2002	VR2002	SELF RECORDING	VIDEO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	0.4±0.4msec.	

Note: If ☒ appears in any block, this means it is not used or not important.

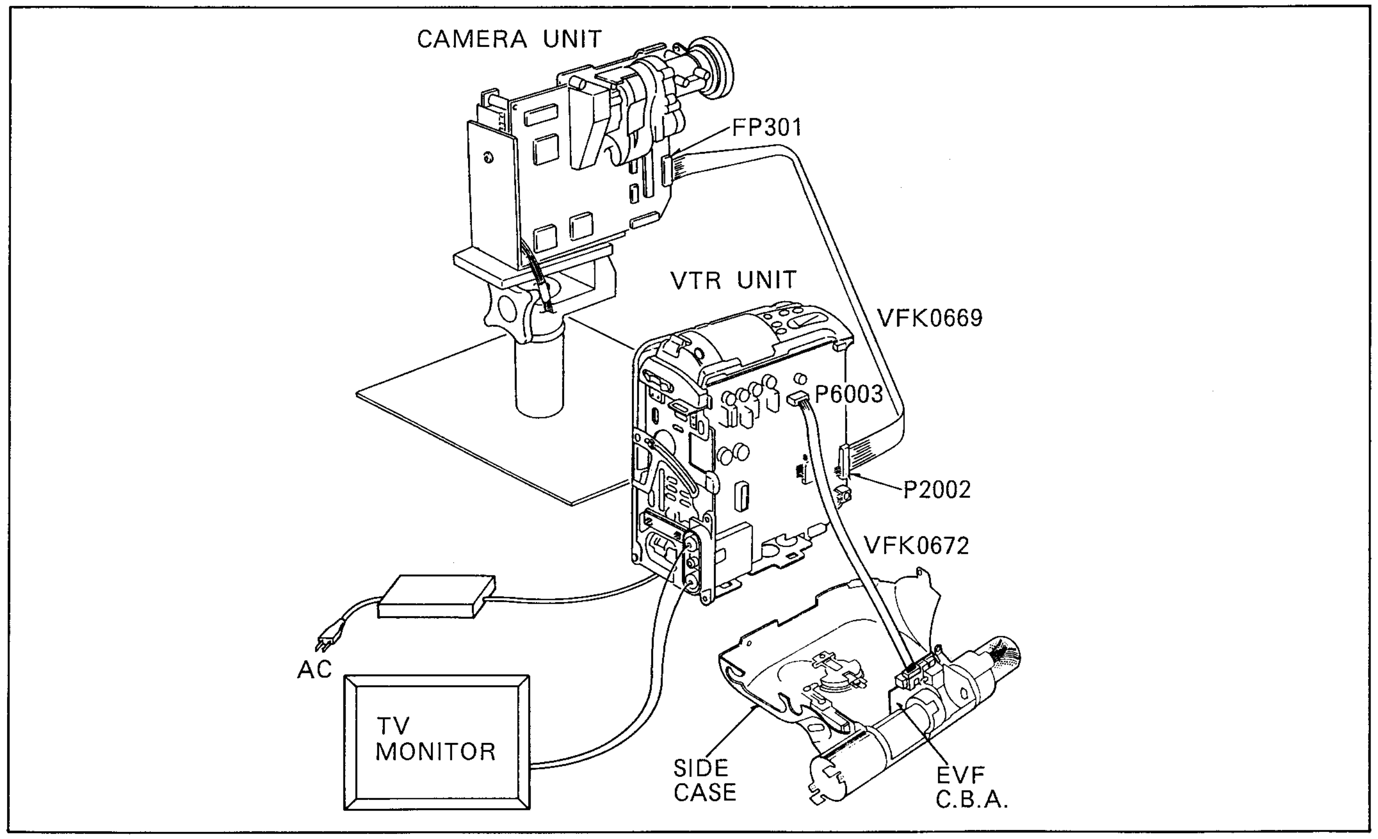

CAMERA UNIT
FP301
VTR UNIT
VFK0669
P6003
P2002
VFK0672
AC
TV MONITOR
SIDE CASE
EVF C.B.A.

Fig. V1

FOR TRIGGERING OF THE OSCILLOSCOPE

To trigger the Oscilloscope, the following test point is used.

H. rate : VIDEO OUT
V. rate : TP2001 (Head Switching signal)

Note:
Before the electrical adjustment, set the Unit as following conditions except for especial instructions in each adjustment item.

1. Tape Speed Selector ... SP position.
2. Tracking Control ... Center FIX position.

POWER SECTION

1. REG. 5V ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP1001 (HOT) TP1005 (GND)	VR1001	CAMERA RECORDING EIS ON	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	4.65±0.020V	

Note:
EVF, Camera Unit , and camera operation unit are connect to the VTR unit.
Turn the Power sw on and then EIS system set to the on position.

1. Connect the D.V.M. To TP1001(HOT) and TP1005(GND) Adjust the VR1001 so that D.V.M. becomes 4.65+−0.020V.

2. CAMERA 5V ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP1006 (HOT) TP1005 (GND)	VR1003	CAMERA RECORDING EIS ON	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	4.35±0.020V	

Note:
EVF, Camera Unit, and camera operation unit are connect to the VTR unit.
Turn the power sw on and then EIS system Set to the on position.

1. Connect the D.V.M. To TP1006(HOT) and TP1005(GND) Adjust the VR1003 so that D.V.M. becomes 4.35+−0.020V.

3. CAMERA 9V ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP1002 (HOT) TP1005 (GND)	VR1002	CAMERA RECORDING EIS ON	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	$8.6^{+0.07V}_{-0.03V}$	

Note:
EIS system Set to the on position.

1. Connect the D.V.M. To TP1002(HOT) and TP1005(GND) Adjust the VR1002 so that D.V.M. becomes 8.6+0.07V,−0.03V.

SERVO SECTION

4. PG SHIFTER ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP2001 VIDEO OUT (J3002)	VR2001	PLAY	
TAPE	**M. EQ.**	**SPEC.**	
ALIGNMENT TAPE (VFM8180HUPF)	OSCILLO-SCOPE	6.5H±0.5H	

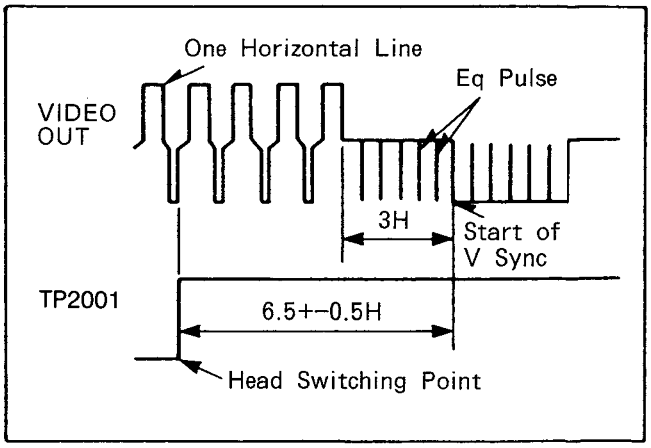


Fig. V2

LUMINANCE & CHROMINANCE SECTION

5. COLOUR 90 DEGREE, COLOUR 270 DEGREE ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUTPUT	VR8003 VR8007	STOP	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
	VECTOR-SCOPE	SHOWN IN FIG. 6	

1. Connect the jumper wire. Through capacitor (10V, 47uF) between TP8008 (P2002–16) and GND in order to eliminate the B–Y signal.
2. Supply Video out signal to vectorscope.
3. Aim the camera at colour bar chart.
4. Adjust the VR8003 so that signal comes on R–Y axis as shown below.
5. Disconnect the jumper wire from TP8008 (P2002–16) and then connect to the TP8007 (P2002–17) in order to eliminate the R–Y signal.
6. Adjust the VR8007 so that signal comes on B–Y axis as shown below.

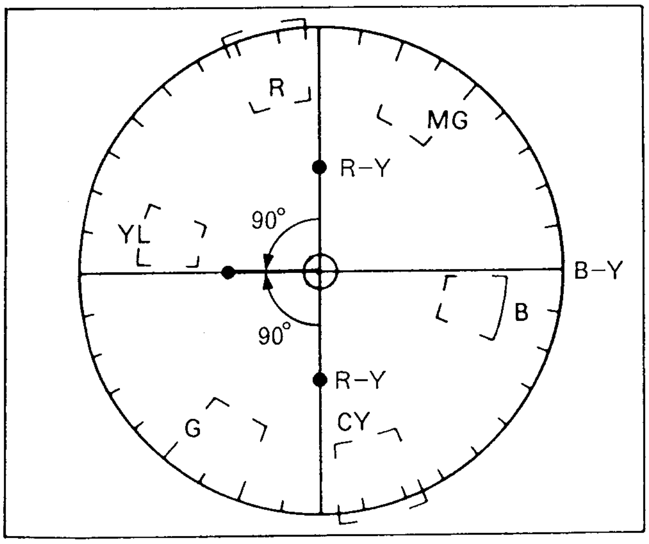


Fig. V3

6. BURST LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR8006	STOP	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
	OSCILLO-SCOPE	REFER TO Fig. V7 BURST=300+–30mVp-p	

1. Connect the jumper wire through capacitor (10V, 47uF) between TP8008(P2002–16)and GND in order to eliminate the R–Y signal.
2. Aim the camera at colour bar.
3. Connect the Video output to oscilloscope.
4. Adjust the VR8006 so that burst level becomes 300+–30mVp–p.

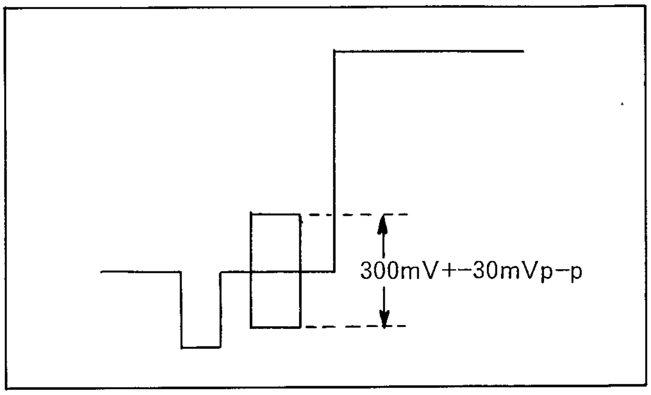


Fig. V4

7. AFC ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP8003	VR8008	STOP	
TAPE	**M. EQ.**	**SPEC.**	
	FREQ. COUNTER	6.13±7.5kHz	

1. Connect the jumper wire between TP1006 and TP8001 and TP8301.
2. Connect the frequency counter to TP8003.
3. Adjust the VR8006 so that frequency become 613+–7.5KHz.

8. R-Y AND B-Y CLAMP ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR8004 VR8005	STOP	
TAPE	**M. EQ.**	**SPEC.**	
	OSCILLO-SCOPE OR VECTOR-SCOPE	VECTOR COMES CENTER	

1. Cover the lens with LENS CAP or close the IRIS.
2. Connect the Video output to Vectorscope (or oscilloscope).
3. Adjust the VR8004 and VR8005 so that the waveform become minimized as shown in FiG. V3. or so that Vector comes to center as shown in Fig. V6.

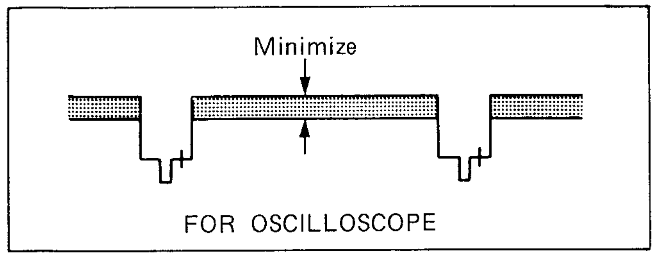


Fig. V5

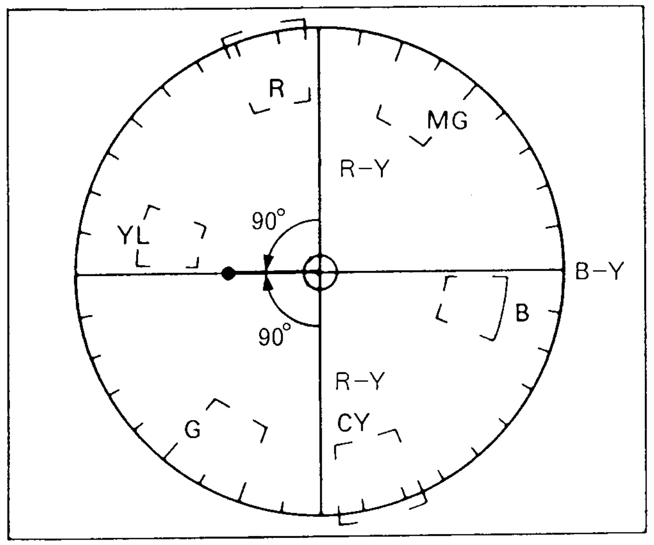


Fig. V6

9. YNR ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3003	VR3002	SELF RECORDING	COLOUR BAR
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO-SCOPE	SIGNAL IS MINIMIZED (LESS THAN 100mV)	

1. Aim the camera at colour bar chart.
2. Record it with S-VHS SP mode.
3. Connect the oscilloscope to TP3003.
4. Play back just recorded portion.
5. Adjust VR3002 so that signal is minimized.

10. RECORDING CURRENT ADJUSTMENT
REC CHROMA LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP5001 (HOT) TP5002 (GND)	VR8010	REC/PLAY (SP)	COLOUR BAR
TAPE	M. EQ.	SPEC.	
S-VHS BLANK TAPE	OSCILLO-SCOPE	11±5mVp-p	

1. Connect the oscilloscope to TP5001(HOT) and TP5002(GND).
2. Aim the camera at colour bar.
3. Make recording with SP mode.
4. Eliminate luminance signal by turning VR3001.
5. Adjust the VR8010 so that chroma level become 11+-5mVp-p.

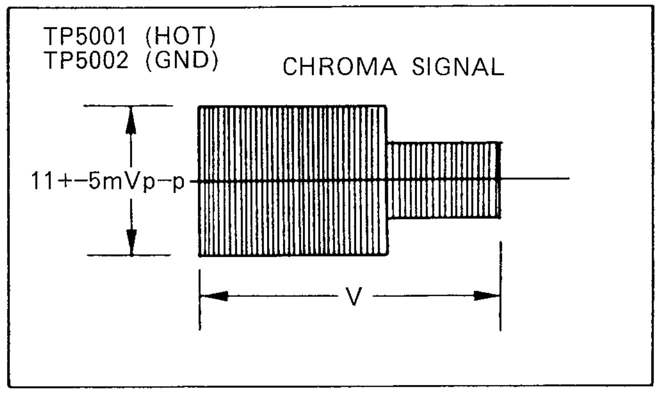


Fig. V7

11. LUMINANCE RECORDING CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP5001 (HOT) TP5002 (GND)	VR3104	REC/PLAY (SP)	COLOUR BAR
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO-SCOPE	100±5mVp-p	

1. Connect the oscilloscope to TP5001 (HOT) and TP5002 (GND).
2. Aim the camera at colour bar.
3. Make recording with SP mode.
4. Adjust the VR3104 so that luminance level becomes 100+-5mVp-p.

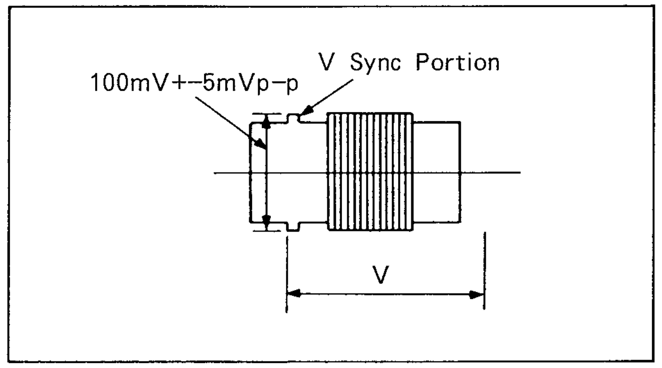


Fig. V8

12. HEAD AMP FREQUENCY RESPONSE ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR3102	SELF RECORDING (SP)	VIDEO SWEEP SIGNAL
TAPE	M. EQ.	SPEC.	
BLANK TAPE	VIDEO SWEEP/ OSCILLO-SCOPE	A=−4±1dB (56~71%)	

Note:
Edit switch must be off.

1. Set the sweep generator output as shown below.

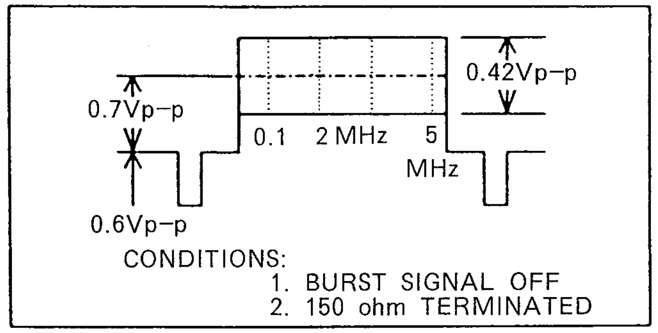


Fig. V9

2. Connect the jumper wire between TP3002 and TP1006(+5V).
3. Supply sweep signal to TP3001.
4. Record it for a while.
5. Play back just recorded portion.
6. Adjust VR3102 so that level at 2MHz is within spec. as shown below.

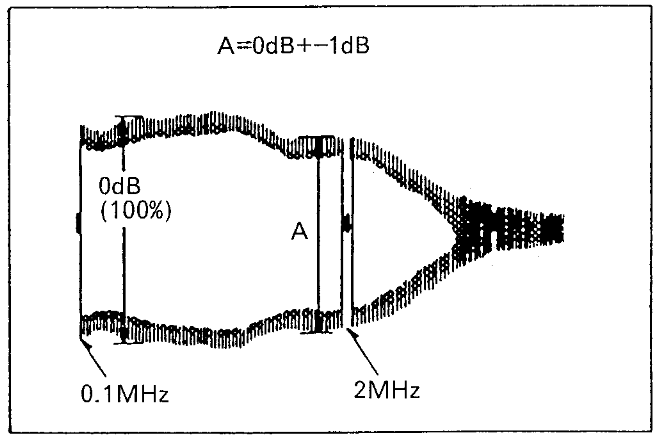


Fig. V10

13. 4.43MHz ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP8012	C8098		COLOUR BAR
TAPE	M. EQ.	SPEC.	
BLANK TAPE	FREQ. COUNTER	4.43361875MHz±15Hz	

1. Aim the camera at colour bar.
2. Record it for a while.
3. Play back just recorded portion.
4. Adjust C8098 so the reading of frequency counter is 4.43361875MHz+-15Hz.

14. BM CARRIER LEAK ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR8009	SELF RECORDING	
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO-SCOPE TV MONITOR	CROSS MODULATION INTER FERENCE IS MINIMIZED	

1. Aim the camera at White chart.
2. Press the Memory Bottom (keep the button pressed for more than half Second).
   After that, Press the Title colour / colour Reverse selector so that only blue appeaed on TV Screen.
3. Adjust the VR8009 so that cross Modulation Interference is minimized on TV screen.

AUDIO SECTION

15. AUDIO BIAS CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4001 (HOT) TP4002 (GND)	VR4002	REC/PLAY	
TAPE	M. EQ.	SPEC.	
BLANK TAPE	D.V.M.	2.7mVrms±0.1mVrms	

16. AUDIO PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
LINE OUT	VR4001	SELF RECORDING	1kHz AUDIO −60dB SIGNAL/ VIDEO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	SIGNAL GENERATOR/D.V.M.	EE LEVEL=−8.0±2dB PB LEVEL= EE LEVEL=±0.5dB	

1. Supply the audio signal (1KHz/−60dB sine−wave) to audio circuit through the MIC Input Jack.
2. Adjust the VR4001 so that the Playback level become −8dB+−0.5dB.

SYSTEM CONTROL SECTION

17. CHARACTER POSITION ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIEW FINDER	C6004	STOP	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
	VIEW FINDER		

1. Connect the EVF unit to the VTR unit.
2. Disconnect the Flexible card from P2002.
3. Supply the colour bar signal to TP3006.
4. Adjust the C6004 so that the character Position is shown below.

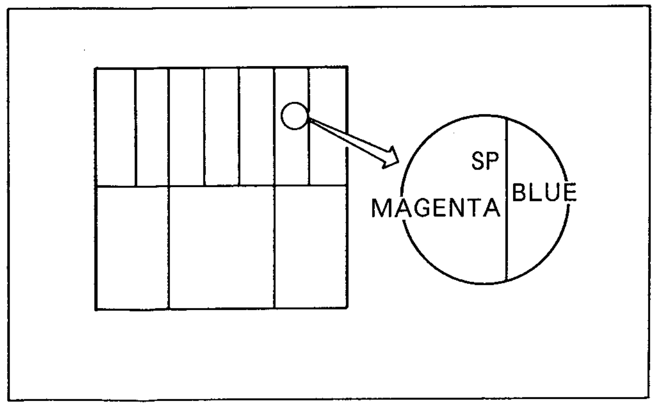


Fig. V11

18. UNDER CUT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP6004	VR6001	REC/PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLOSCOPE/ DC POWER SUPPLY/ D.V.M.		

Note:
Do not connect AC Adaptor, connect a DC Power Supply to the Battery terminal (+),(−) then Supply the Voltage 5.50+0.05V,−0.025V.

1. Turn VR6001 until pulse train becomes nothing, (When just pulse train is nothing, stop it.)

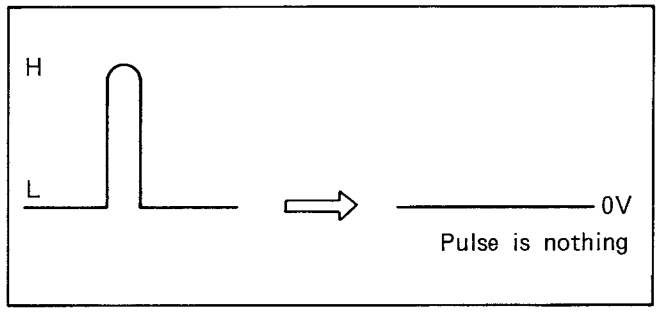


Fig. V12

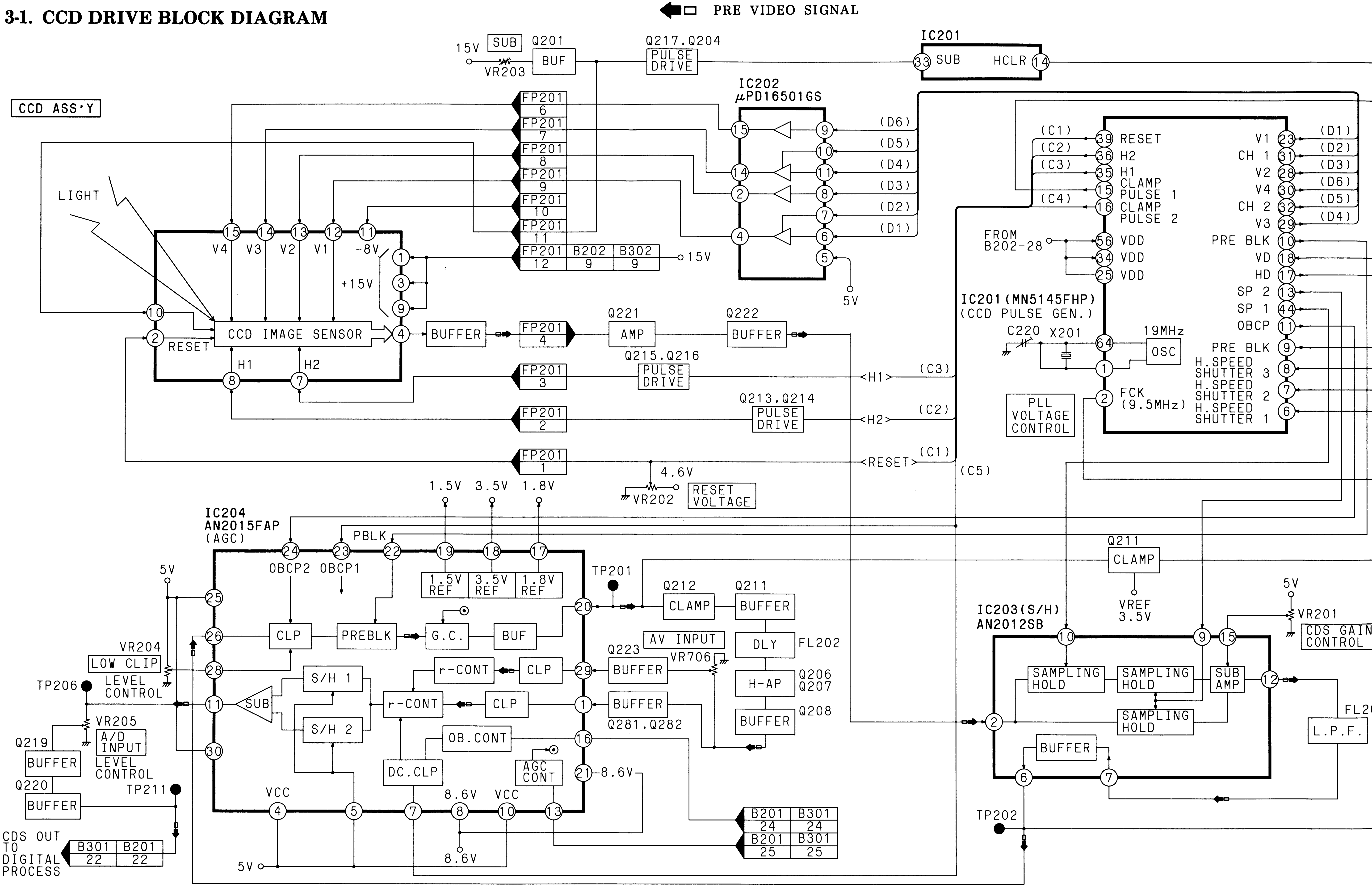
19. DISPLAY MICROPROCESSOR FREQ. ADJUSTMENT

TP	ADJ.	MODE	INPUT
P6201-10	C6204	STOP	
TAPE	**M. EQ.**	**SPEC.**	
	FREQ. COUNTER	1953125+−3.9nsec	

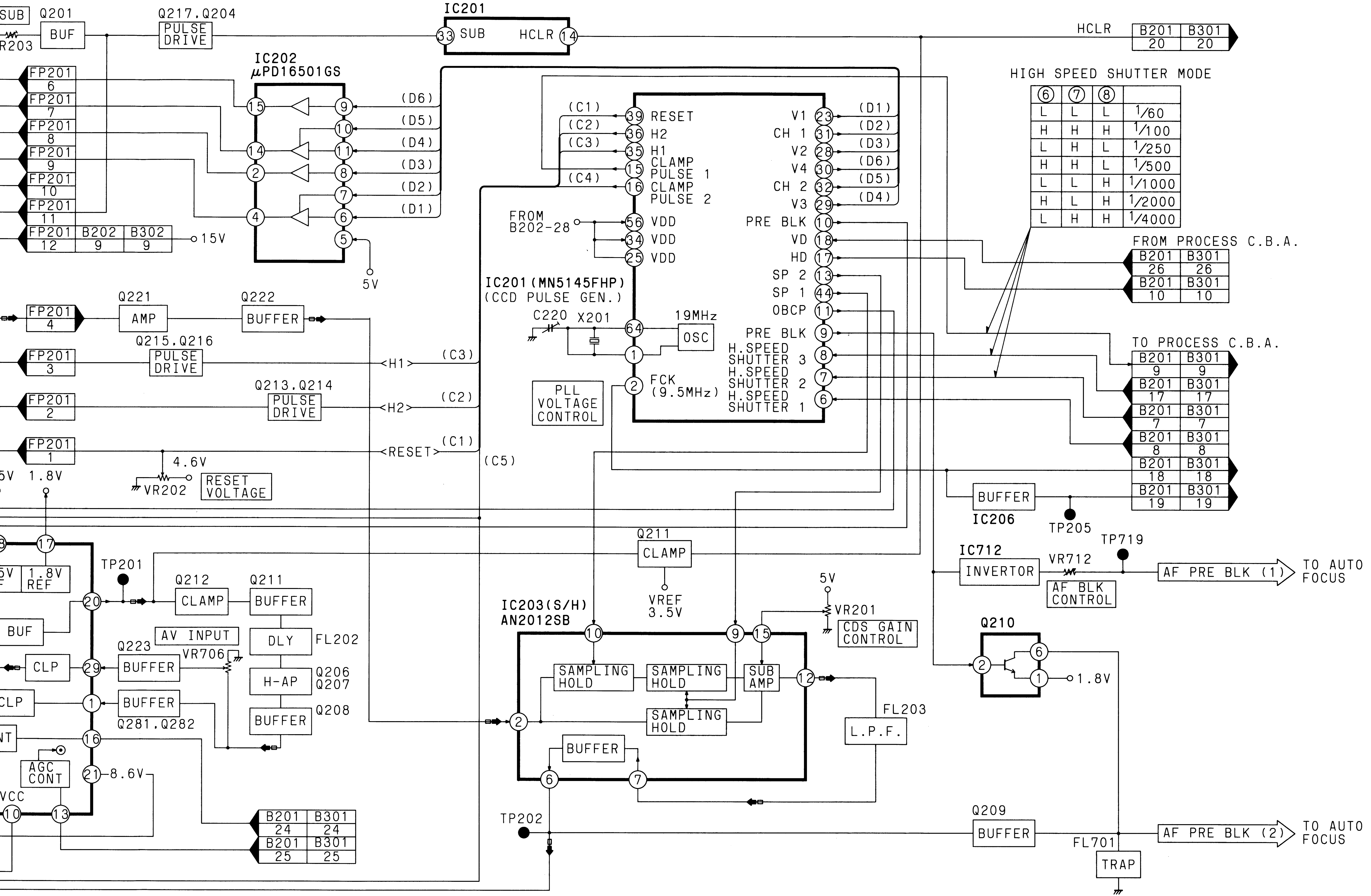
1. Connect the jumper wire between P6201−9 and GND.
2. Adjust the C6204 so the reading of frequency counter is 1953125+−3.9nsec.

Memo

SECTION 3
BLOCK DIAGRAM & SCHEMATIC DIAGRAM
3-1. CCD DRIVE BLOCK DIAGRAM


PRE VIDEO SIGNAL
CCD ASS'Y
LIGHT
CCD IMAGE SENSOR
V4
V3
V2
V1
-8V
+15V
RESET
H1
H2
BUFFER
15V
SUB
VR203
Q201
BUF
Q217.Q204
PULSE DRIVE
IC201
SUB
HCLR
IC202
μPD16501GS
FP201 6
FP201 7
FP201 8
FP201 9
FP201 10
FP201 11
FP201 12
B202 9
B302 9
15V
5V
(D1)
(D2)
(D3)
(D4)
(D5)
(D6)
FP201 4
Q221
AMP
Q222
BUFFER
FP201 3
Q215.Q216
PULSE DRIVE
<H1>
(C3)
Q213.Q214
FP201 2
<H2>
(C2)
FP201 1
<RESET>
(C1)
4.6V
VR202
RESET VOLTAGE
(C5)
(C4)
RESET
H2
H1
CLAMP PULSE 1
CLAMP PULSE 2
FROM B202-28
VDD
IC201(MN5145FHP)
(CCD PULSE GEN.)
C220
X201
19MHz
OSC
FCK (9.5MHz)
PLL VOLTAGE CONTROL
V1
CH 1
V2
V4
CH 2
V3
PRE BLK
VD
HD
SP 2
SP 1
OBCP
PRE BLK
H.SPEED SHUTTER 3
H.SPEED SHUTTER 2
H.SPEED SHUTTER 1
1.5V
3.5V
1.8V
IC204
AN2015FAP
(AGC)
OBCP2
OBCP1
PBLK
1.5V REF
3.5V REF
1.8V REF
5V
CLP
PREBLK
G.C.
BUF
LOW CLIP
VR204
LEVEL CONTROL
TP206
SUB
S/H 1
S/H 2
r-CONT
CLP
r-CONT
CLP
OB.CONT
DC.CLP
AGC CONT
VR205
A/D INPUT
LEVEL CONTROL
Q219
BUFFER
Q220
BUFFER
TP211
CDS OUT TO DIGITAL PROCESS
B301 22
B201 22
VCC
8.6V
VCC
5V
8.6V
TP201
Q212
CLAMP
Q211
BUFFER
AV INPUT
Q223
BUFFER
VR706
DLY
FL202
H-AP
Q206
Q207
BUFFER
Q208
Q281.Q282
8.6V
B201 24
B301 24
B201 25
B301 25
Q211
CLAMP
VREF 3.5V
IC203(S/H)
AN2012SB
SAMPLING HOLD
SAMPLING HOLD
SAMPLING HOLD
SUB AMP
BUFFER
5V
VR201
CDS GAIN CONTROL
L.P.F.
TP202

RAM

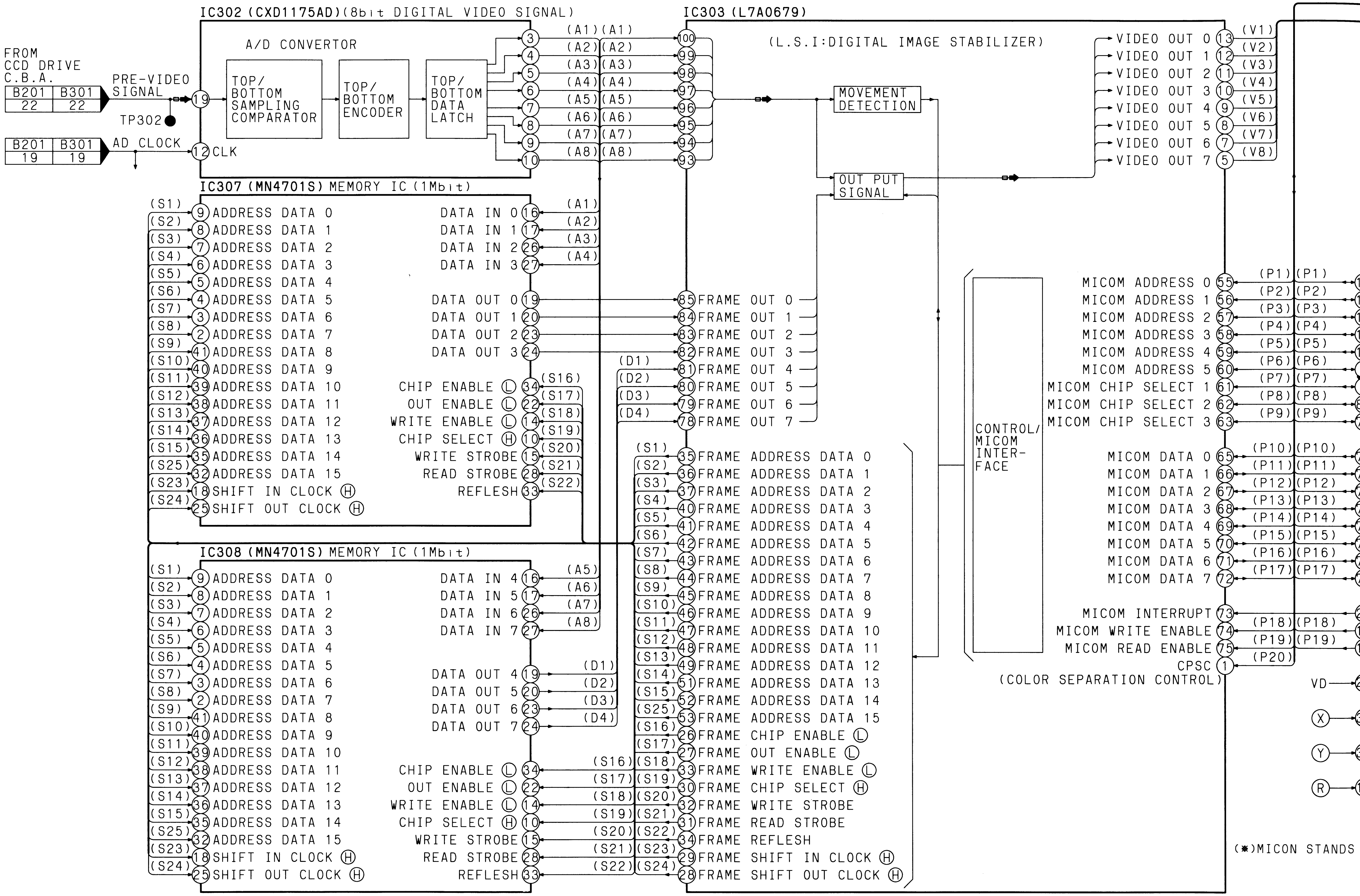

PRE VIDEO SIGNAL
SUB
Q201
BUF
R203
Q217.Q204
PULSE DRIVE
IC201
33 SUB
HCLR 14
HCLR
B201 20
B301 20
IC202
μPD16501GS
FP201 6
FP201 7
FP201 8
FP201 9
FP201 10
FP201 11
FP201 12
B202 9
B302 9
15V
5V
(D1) (D2) (D3) (D4) (D5) (D6)
39 RESET
36 H2
35 H1
15 CLAMP PULSE 1
16 CLAMP PULSE 2
(C1) (C2) (C3) (C4) (C5)
V1 23
CH 1 31
V2 28
V4 30
CH 2 32
V3 29
PRE BLK 10
VD 18
HD 17
SP 2 13
SP 1 44
OBCP 11
PRE BLK 9
H.SPEED SHUTTER 3 8
H.SPEED SHUTTER 2 7
H.SPEED SHUTTER 1 6
FROM B202-28
56 VDD
34 VDD
25 VDD
IC201 (MN5145FHP)
(CCD PULSE GEN.)
C220
X201
19MHz
OSC
64
1
2 FCK (9.5MHz)
PLL VOLTAGE CONTROL
HIGH SPEED SHUTTER MODE
FROM PROCESS C.B.A.
B201 26 B301 26
B201 10 B301 10
TO PROCESS C.B.A.
B201 9 B301 9
B201 17 B301 17
B201 7 B301 7
B201 8 B301 8
B201 18 B301 18
B201 19 B301 19
BUFFER
IC206
TP205
FP201 4
Q221
AMP
Q222
BUFFER
FP201 3
Q215.Q216
PULSE DRIVE
H1
FP201 2
Q213.Q214
PULSE DRIVE
H2
FP201 1
RESET
4.6V
VR202
RESET VOLTAGE
5V 1.8V
17
1.8V REF
TP201
20
Q212 CLAMP
Q211 BUFFER
BUF
AV INPUT
VR706
DLY FL202
H-AP Q206 Q207
BUFFER Q208
Q223 BUFFER
CLP 29
CLP 1
BUFFER
Q281.Q282
16
AGC CONT
21 8.6V
VCC 10 13
B201 24 B301 24
B201 25 B301 25
Q211 CLAMP
VREF 3.5V
IC203 (S/H)
AN2012SB
10 9 15
5V
VR201
CDS GAIN CONTROL
SAMPLING HOLD
SUB AMP
12
2
BUFFER
6 7
FL203
L.P.F.
TP202
IC712
INVERTOR
VR712
TP719
AF BLK CONTROL
AF PRE BLK (1)
TO AUTO FOCUS
Q210
2 6 1
1.8V
Q209
BUFFER
FL701
TRAP
AF PRE BLK (2)
TO AUTO FOCUS

HIGH SPEED SHUTTER MODE

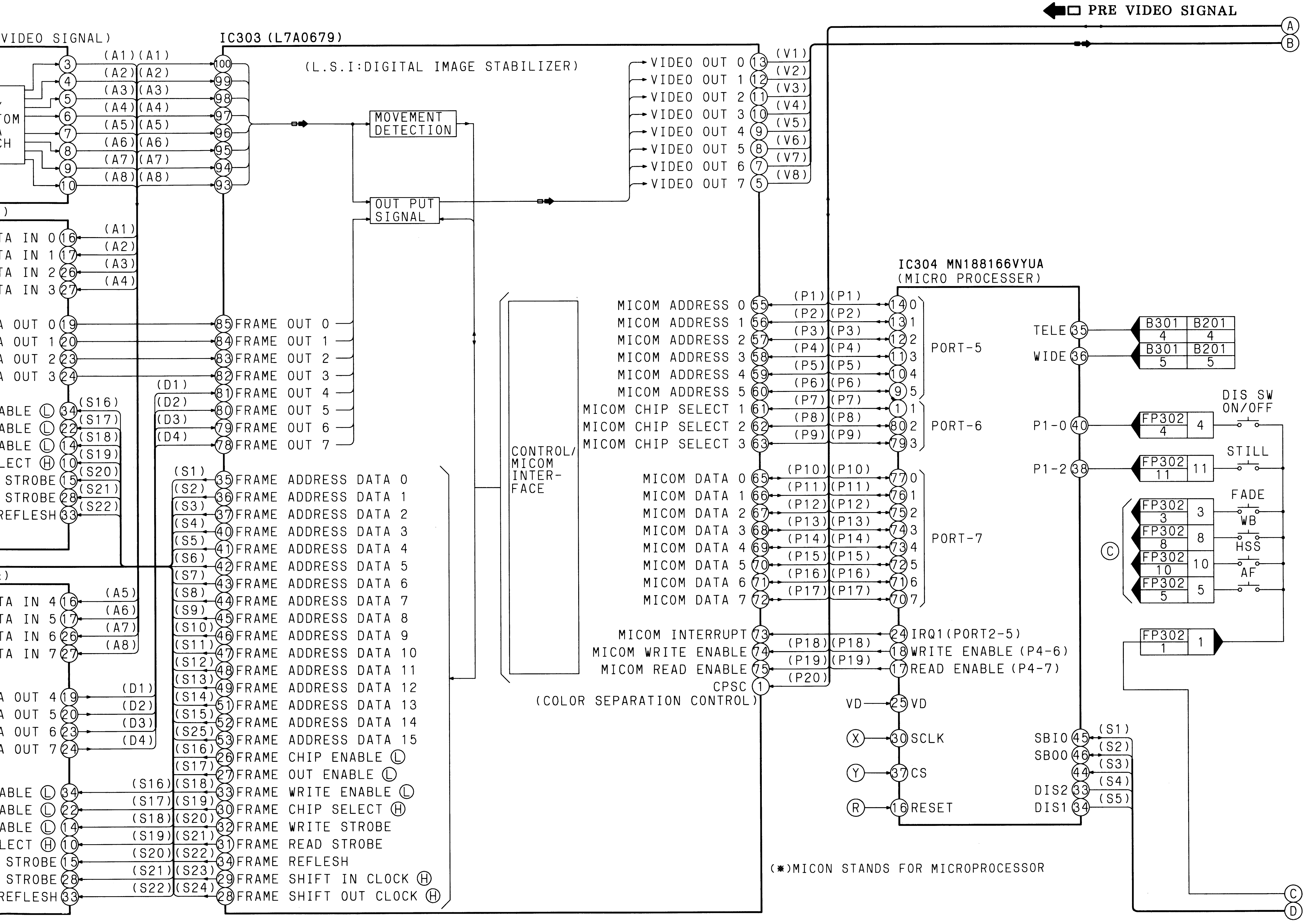
⑥	⑦	⑧	
L	L	L	1/60
H	H	H	1/100
L	H	L	1/250
H	H	L	1/500
L	L	H	1/1000
H	L	H	1/2000
L	H	H	1/4000

Next Page:
PROCESS Section

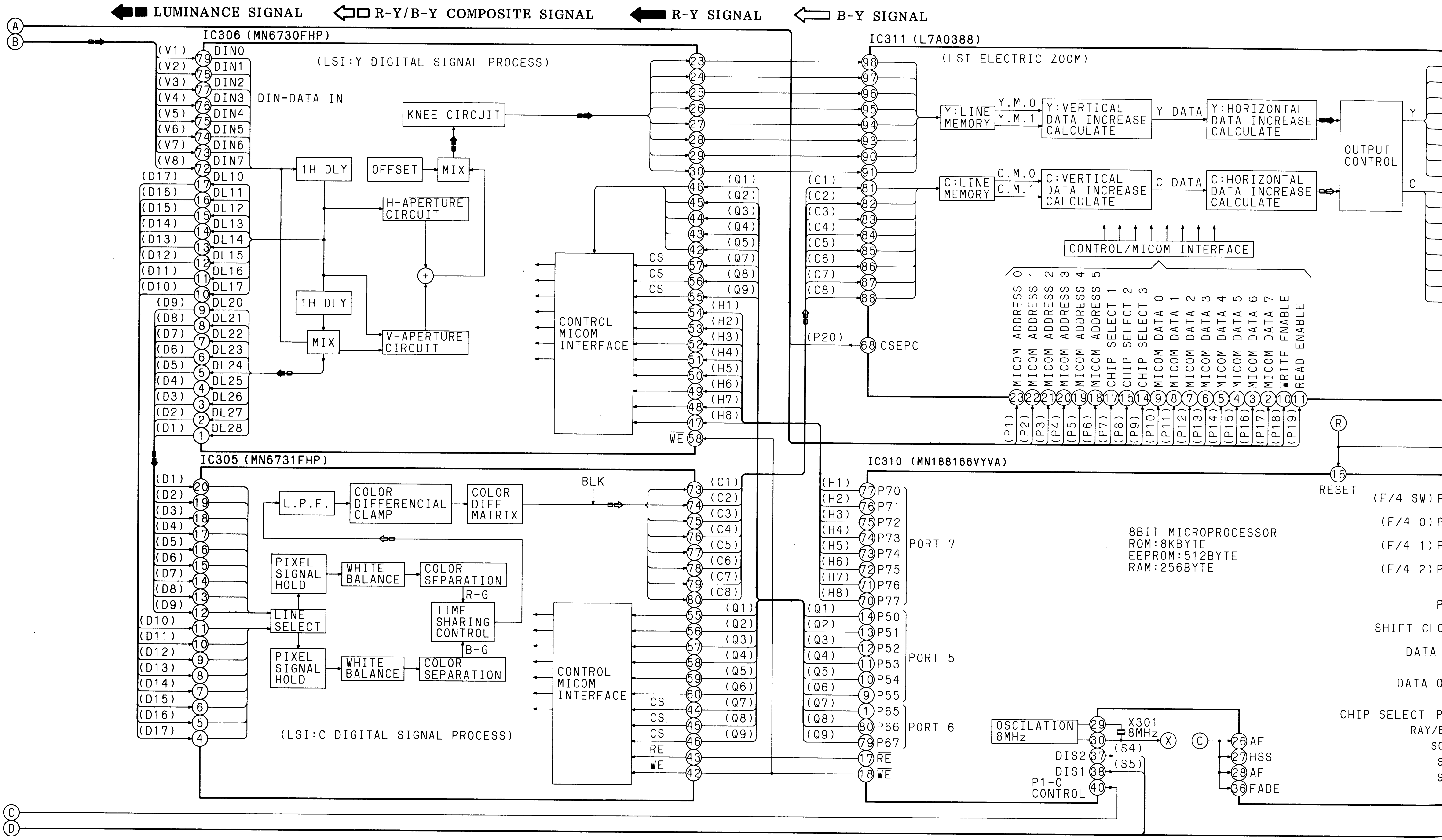
3-2. PROCESS BLOCK DIAGRAM

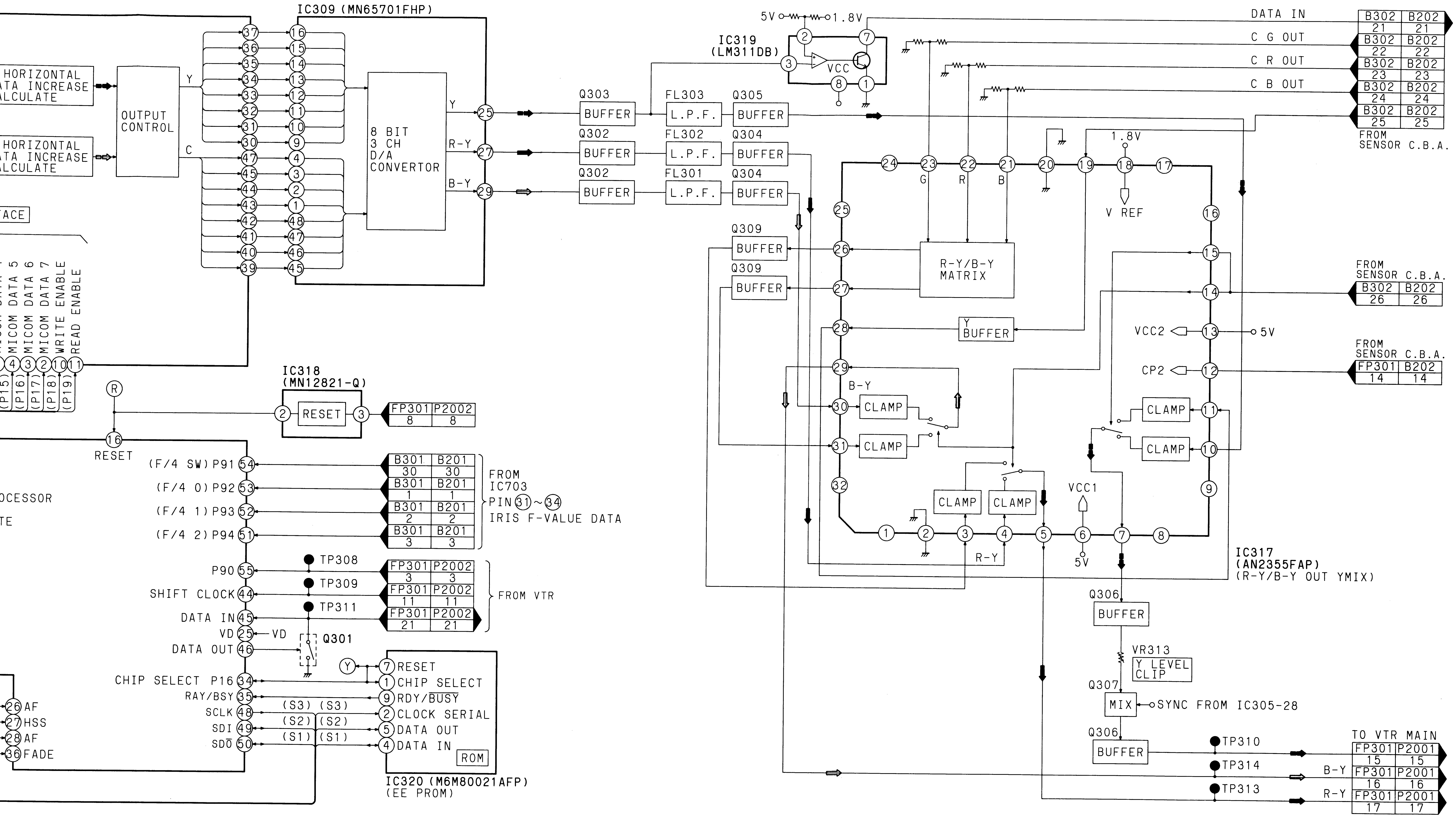


IC302 (CXD1175AD)(8bit DIGITAL VIDEO SIGNAL)
A/D CONVERTOR
TOP/ BOTTOM SAMPLING COMPARATOR
TOP/ BOTTOM ENCODER
TOP/ BOTTOM DATA LATCH
FROM CCD DRIVE C.B.A.
B201 22
B301 22
PRE-VIDEO SIGNAL
TP302
B201 19
B301 19
AD CLOCK
12 CLK
19
(A1) (A2) (A3) (A4) (A5) (A6) (A7) (A8)
IC303 (L7A0679)
(L.S.I:DIGITAL IMAGE STABILIZER)
MOVEMENT DETECTION
OUT PUT SIGNAL
VIDEO OUT 0 13 (V1)
VIDEO OUT 1 12 (V2)
VIDEO OUT 2 11 (V3)
VIDEO OUT 3 10 (V4)
VIDEO OUT 4 9 (V5)
VIDEO OUT 5 8 (V6)
VIDEO OUT 6 7 (V7)
VIDEO OUT 7 5 (V8)
IC307 (MN4701S) MEMORY IC (1Mbit)
ADDRESS DATA 0
ADDRESS DATA 1
ADDRESS DATA 2
ADDRESS DATA 3
ADDRESS DATA 4
ADDRESS DATA 5
ADDRESS DATA 6
ADDRESS DATA 7
ADDRESS DATA 8
ADDRESS DATA 9
ADDRESS DATA 10
ADDRESS DATA 11
ADDRESS DATA 12
ADDRESS DATA 13
ADDRESS DATA 14
ADDRESS DATA 15
SHIFT IN CLOCK Ⓗ
SHIFT OUT CLOCK Ⓗ
DATA IN 0
DATA IN 1
DATA IN 2
DATA IN 3
DATA OUT 0
DATA OUT 1
DATA OUT 2
DATA OUT 3
CHIP ENABLE Ⓛ
OUT ENABLE Ⓛ
WRITE ENABLE Ⓛ
CHIP SELECT Ⓗ
WRITE STROBE
READ STROBE
REFLESH
(S1) (S2) (S3) (S4) (S5) (S6) (S7) (S8) (S9) (S10) (S11) (S12) (S13) (S14) (S15) (S25) (S23) (S24)
(S16) (S17) (S18) (S19) (S20) (S21) (S22)
IC308 (MN4701S) MEMORY IC (1Mbit)
DATA IN 4
DATA IN 5
DATA IN 6
DATA IN 7
DATA OUT 4
DATA OUT 5
DATA OUT 6
DATA OUT 7
(D1) (D2) (D3) (D4)
FRAME OUT 0
FRAME OUT 1
FRAME OUT 2
FRAME OUT 3
FRAME OUT 4
FRAME OUT 5
FRAME OUT 6
FRAME OUT 7
FRAME ADDRESS DATA 0
FRAME ADDRESS DATA 1
FRAME ADDRESS DATA 2
FRAME ADDRESS DATA 3
FRAME ADDRESS DATA 4
FRAME ADDRESS DATA 5
FRAME ADDRESS DATA 6
FRAME ADDRESS DATA 7
FRAME ADDRESS DATA 8
FRAME ADDRESS DATA 9
FRAME ADDRESS DATA 10
FRAME ADDRESS DATA 11
FRAME ADDRESS DATA 12
FRAME ADDRESS DATA 13
FRAME ADDRESS DATA 14
FRAME ADDRESS DATA 15
FRAME CHIP ENABLE Ⓛ
FRAME OUT ENABLE Ⓛ
FRAME WRITE ENABLE Ⓛ
FRAME CHIP SELECT Ⓗ
FRAME WRITE STROBE
FRAME READ STROBE
FRAME REFLESH
FRAME SHIFT IN CLOCK Ⓗ
FRAME SHIFT OUT CLOCK Ⓗ
CONTROL/ MICOM INTER- FACE
MICOM ADDRESS 0
MICOM ADDRESS 1
MICOM ADDRESS 2
MICOM ADDRESS 3
MICOM ADDRESS 4
MICOM ADDRESS 5
MICOM CHIP SELECT 1
MICOM CHIP SELECT 2
MICOM CHIP SELECT 3
MICOM DATA 0
MICOM DATA 1
MICOM DATA 2
MICOM DATA 3
MICOM DATA 4
MICOM DATA 5
MICOM DATA 6
MICOM DATA 7
MICOM INTERRUPT
MICOM WRITE ENABLE
MICOM READ ENABLE
CPSC
(COLOR SEPARATION CONTROL)
(P1) (P2) (P3) (P4) (P5) (P6) (P7) (P8) (P9) (P10) (P11) (P12) (P13) (P14) (P15) (P16) (P17) (P18) (P19) (P20)
VD
Ⓧ
Ⓨ
Ⓡ
(✱)MICON STANDS

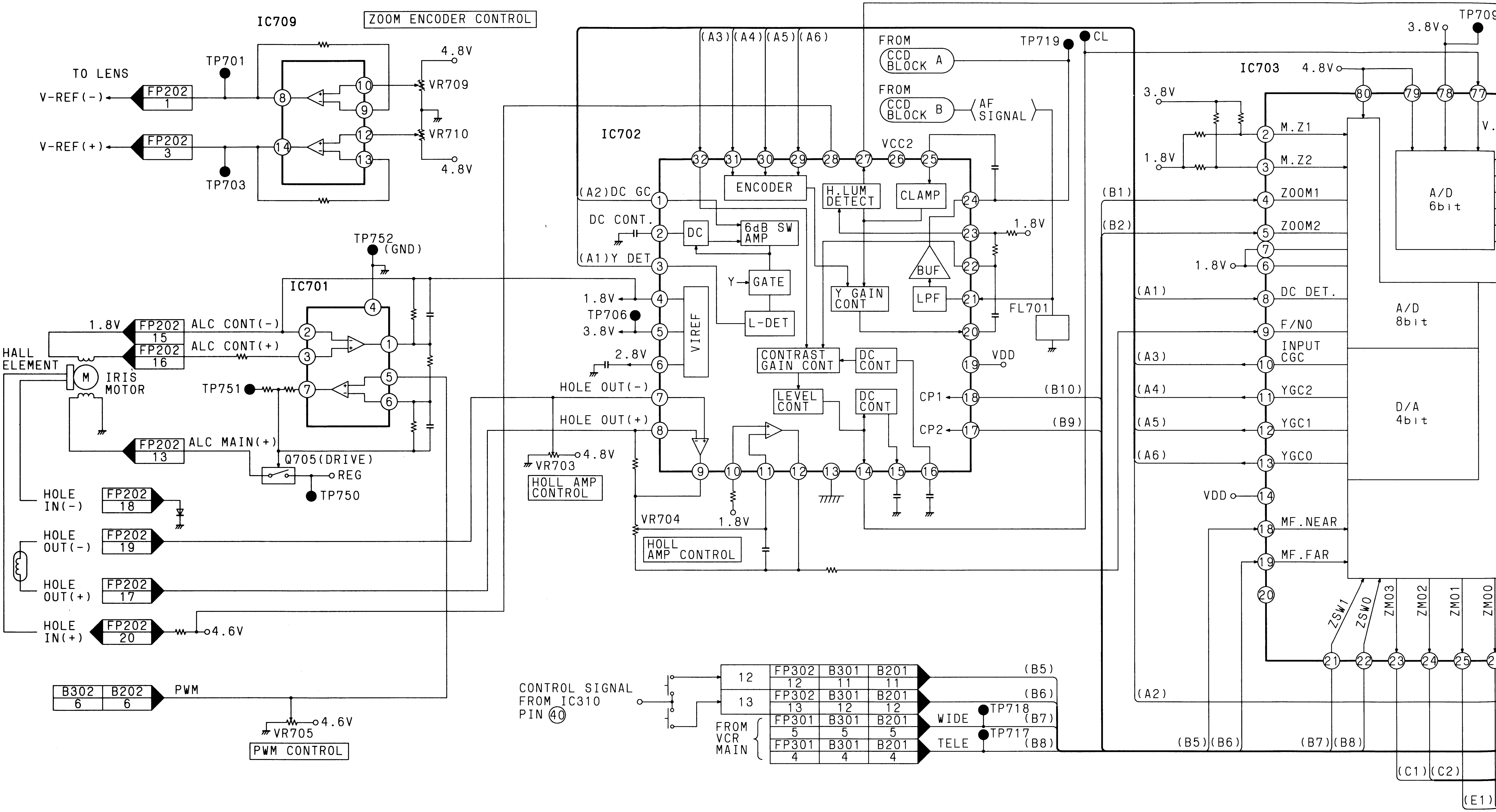

PRE VIDEO SIGNAL
VIDEO SIGNAL)
IC303 (L7A0679)
(L.S.I:DIGITAL IMAGE STABILIZER)
MOVEMENT DETECTION
OUT PUT SIGNAL
CONTROL/ MICOM INTER- FACE
VIDEO OUT 0
VIDEO OUT 1
VIDEO OUT 2
VIDEO OUT 3
VIDEO OUT 4
VIDEO OUT 5
VIDEO OUT 6
VIDEO OUT 7
(V1)
(V2)
(V3)
(V4)
(V5)
(V6)
(V7)
(V8)
(A1)
(A2)
(A3)
(A4)
(A5)
(A6)
(A7)
(A8)
TOM
CH
TA IN 0
TA IN 1
TA IN 2
TA IN 3
A OUT 0
A OUT 1
A OUT 2
A OUT 3
ABLE Ⓛ
ABLE Ⓛ
ABLE Ⓛ
LECT Ⓗ
STROBE
STROBE
REFLESH
TA IN 4
TA IN 5
TA IN 6
TA IN 7
A OUT 4
A OUT 5
A OUT 6
A OUT 7
FRAME OUT 0
FRAME OUT 1
FRAME OUT 2
FRAME OUT 3
FRAME OUT 4
FRAME OUT 5
FRAME OUT 6
FRAME OUT 7
(D1)
(D2)
(D3)
(D4)
FRAME ADDRESS DATA 0
FRAME ADDRESS DATA 1
FRAME ADDRESS DATA 2
FRAME ADDRESS DATA 3
FRAME ADDRESS DATA 4
FRAME ADDRESS DATA 5
FRAME ADDRESS DATA 6
FRAME ADDRESS DATA 7
FRAME ADDRESS DATA 8
FRAME ADDRESS DATA 9
FRAME ADDRESS DATA 10
FRAME ADDRESS DATA 11
FRAME ADDRESS DATA 12
FRAME ADDRESS DATA 13
FRAME ADDRESS DATA 14
FRAME ADDRESS DATA 15
FRAME CHIP ENABLE Ⓛ
FRAME OUT ENABLE Ⓛ
FRAME WRITE ENABLE Ⓛ
FRAME CHIP SELECT Ⓗ
FRAME WRITE STROBE
FRAME READ STROBE
FRAME REFLESH
FRAME SHIFT IN CLOCK Ⓗ
FRAME SHIFT OUT CLOCK Ⓗ
(S1)
(S2)
(S3)
(S4)
(S5)
(S6)
(S7)
(S8)
(S9)
(S10)
(S11)
(S12)
(S13)
(S14)
(S15)
(S25)
(S16)
(S17)
(S18)
(S19)
(S20)
(S21)
(S22)
(S23)
(S24)
MICOM ADDRESS 0
MICOM ADDRESS 1
MICOM ADDRESS 2
MICOM ADDRESS 3
MICOM ADDRESS 4
MICOM ADDRESS 5
MICOM CHIP SELECT 1
MICOM CHIP SELECT 2
MICOM CHIP SELECT 3
MICOM DATA 0
MICOM DATA 1
MICOM DATA 2
MICOM DATA 3
MICOM DATA 4
MICOM DATA 5
MICOM DATA 6
MICOM DATA 7
MICOM INTERRUPT
MICOM WRITE ENABLE
MICOM READ ENABLE
CPSC
(COLOR SEPARATION CONTROL)
(P1)
(P2)
(P3)
(P4)
(P5)
(P6)
(P7)
(P8)
(P9)
(P10)
(P11)
(P12)
(P13)
(P14)
(P15)
(P16)
(P17)
(P18)
(P19)
(P20)
IC304 MN188166VYUA
(MICRO PROCESSER)
PORT-5
PORT-6
PORT-7
IRQ1(PORT2-5)
WRITE ENABLE (P4-6)
READ ENABLE (P4-7)
VD
SCLK
CS
RESET
Ⓧ
Ⓨ
Ⓡ
TELE
WIDE
P1-0
P1-2
SBIO
SBOO
DIS2
DIS1
B301 4
B201 4
B301 5
B201 5
FP302 4
FP302 11
FP302 3
FP302 8
FP302 10
FP302 5
FP302 1
DIS SW ON/OFF
STILL
FADE
WB
HSS
AF
Ⓐ
Ⓑ
Ⓒ
Ⓓ

(*)MICON STANDS FOR MICROPROCESSOR

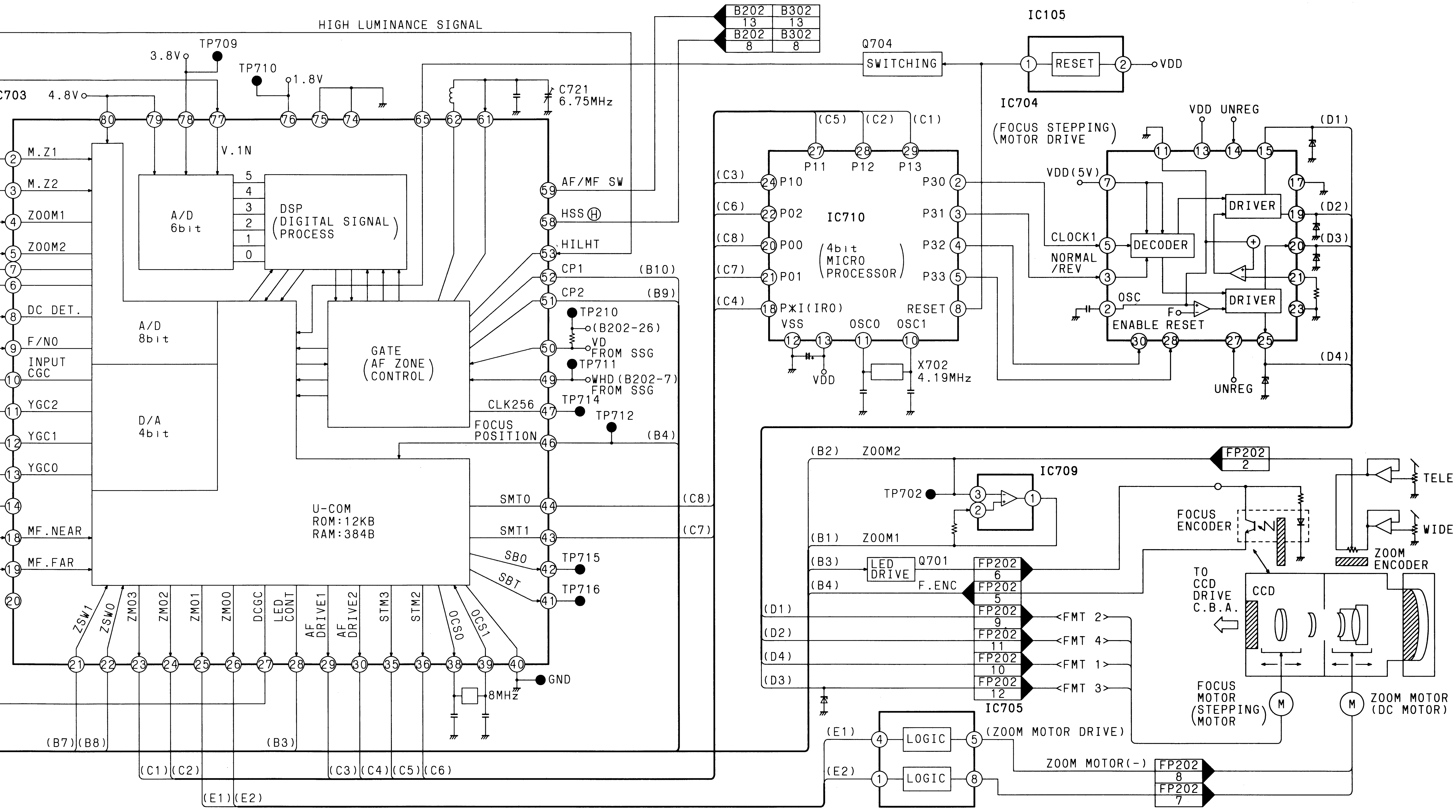

LUMINANCE SIGNAL
R-Y/B-Y COMPOSITE SIGNAL
R-Y SIGNAL
B-Y SIGNAL
A
B
C
D
IC306 (MN6730FHP)
(LSI:Y DIGITAL SIGNAL PROCESS)
DIN0
DIN1
DIN2
DIN3
DIN4
DIN5
DIN6
DIN7
DIN=DATA IN
(V1)
(V2)
(V3)
(V4)
(V5)
(V6)
(V7)
(V8)
DL10
DL11
DL12
DL13
DL14
DL15
DL16
DL17
DL20
DL21
DL22
DL23
DL24
DL25
DL26
DL27
DL28
KNEE CIRCUIT
OFFSET
MIX
1H DLY
H-APERTURE CIRCUIT
V-APERTURE CIRCUIT
1H DLY
MIX
CONTROL MICOM INTERFACE
CS
CS
CS
WE
IC305 (MN6731FHP)
L.P.F.
COLOR DIFFERENCIAL CLAMP
COLOR DIFF MATRIX
BLK
PIXEL SIGNAL HOLD
WHITE BALANCE
COLOR SEPARATION
R-G
TIME SHARING CONTROL
B-G
LINE SELECT
PIXEL SIGNAL HOLD
WHITE BALANCE
COLOR SEPARATION
CONTROL MICOM INTERFACE
CS
CS
CS
RE
WE
(LSI:C DIGITAL SIGNAL PROCESS)
IC311 (L7A0388)
(LSI ELECTRIC ZOOM)
Y:LINE MEMORY
Y.M.0
Y.M.1
Y:VERTICAL DATA INCREASE CALCULATE
Y DATA
Y:HORIZONTAL DATA INCREASE CALCULATE
C:LINE MEMORY
C.M.0
C.M.1
C:VERTICAL DATA INCREASE CALCULATE
C DATA
C:HORIZONTAL DATA INCREASE CALCULATE
OUTPUT CONTROL
Y
C
CONTROL/MICOM INTERFACE
MICOM ADDRESS 0
MICOM ADDRESS 1
MICOM ADDRESS 2
MICOM ADDRESS 3
MICOM ADDRESS 4
MICOM ADDRESS 5
CHIP SELECT 1
CHIP SELECT 2
CHIP SELECT 3
MICOM DATA 0
MICOM DATA 1
MICOM DATA 2
MICOM DATA 3
MICOM DATA 4
MICOM DATA 5
MICOM DATA 6
MICOM DATA 7
WRITE ENABLE
READ ENABLE
(P20)
CSEPC
R
RESET
IC310 (MN188166VYVA)
P70
P71
P72
P73
P74
P75
P76
P77
PORT 7
P50
P51
P52
P53
P54
P55
PORT 5
P65
P66
P67
PORT 6
RE
WE
8BIT MICROPROCESSOR
ROM:8KBYTE
EEPROM:512BYTE
RAM:256BYTE
OSCILLATION 8MHz
X301 8MHz
X
DIS2
DIS1
P1-0 CONTROL
(S4)
(S5)
AF
HSS
AF
FADE
(F/4 SW)
(F/4 0)
(F/4 1)
(F/4 2)
SHIFT CLO
DATA
DATA O
CHIP SELECT
RAY/E


IC309 (MN65701FHP)
HORIZONTAL
ATA INCREASE
ALCULATE
HORIZONTAL
ATA INCREASE
ALCULATE
OUTPUT CONTROL
Y
C
8 BIT 3 CH D/A CONVERTOR
Y
R-Y
B-Y
ACE
MICOM DATA 5
MICOM DATA 6
MICOM DATA 7
WRITE ENABLE
READ ENABLE
(P15)
(P16)
(P17)
(P18)
(P19)
IC318 (MN12821-Q)
RESET
R
FP301 P2002 8 8
RESET
OCESSOR
TE
(F/4 SW) P91
(F/4 0) P92
(F/4 1) P93
(F/4 2) P94
B301 B201 30 30
B301 B201 1 1
B301 B201 2 2
B301 B201 3 3
FROM IC703 PIN ㉛~㉞ IRIS F-VALUE DATA
P90
SHIFT CLOCK
DATA IN
VD
VD
DATA OUT
TP308
TP309
TP311
FP301 P2002 3 3
FP301 P2002 11 11
FP301 P2002 21 21
FROM VTR
Q301
Y
CHIP SELECT P16
RAY/BSY
SCLK
SDI
SDO
(S3) (S3)
(S2) (S2)
(S1) (S1)
RESET
CHIP SELECT
RDY/BUSY
CLOCK SERIAL
DATA OUT
DATA IN
ROM
IC320 (M6M80021AFP)
(EE PROM)
AF
HSS
AF
FADE
5V
1.8V
IC319 (LM311DB)
VCC
Q303 BUFFER
FL303 L.P.F.
Q305 BUFFER
Q302 BUFFER
FL302 L.P.F.
Q304 BUFFER
Q302 BUFFER
FL301 L.P.F.
Q304 BUFFER
DATA IN
C G OUT
C R OUT
C B OUT
B302 B202 21 21
B302 B202 22 22
B302 B202 23 23
B302 B202 24 24
B302 B202 25 25
FROM SENSOR C.B.A.
1.8V
G
R
B
V REF
Q309 BUFFER
Q309 BUFFER
R-Y/B-Y MATRIX
Y BUFFER
FROM SENSOR C.B.A.
B302 B202 26 26
VCC2
5V
CP2
FROM SENSOR C.B.A.
FP301 B202 14 14
B-Y
CLAMP
CLAMP
CLAMP
CLAMP
CLAMP
CLAMP
VCC1
R-Y
5V
IC317 (AN2355FAP) (R-Y/B-Y OUT YMIX)
Q306 BUFFER
VR313 Y LEVEL CLIP
Q307 MIX
SYNC FROM IC305-28
Q306 BUFFER
TO VTR MAIN
TP310
TP314
TP313
B-Y
R-Y
FP301 P2001 15 15
FP301 P2001 16 16
FP301 P2001 17 17

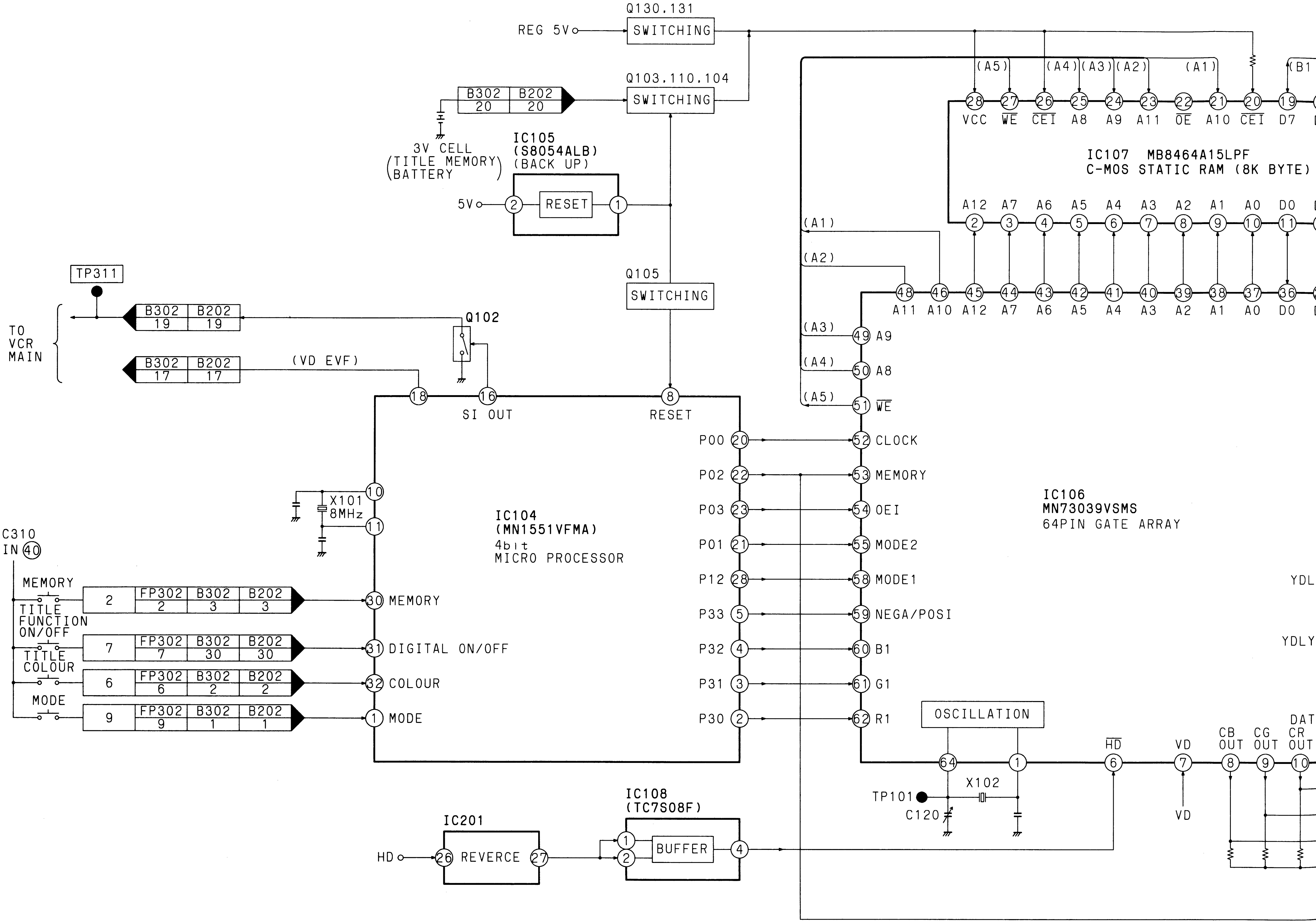
3-3. AUTO FOCUS BLOCK DIAGRAM

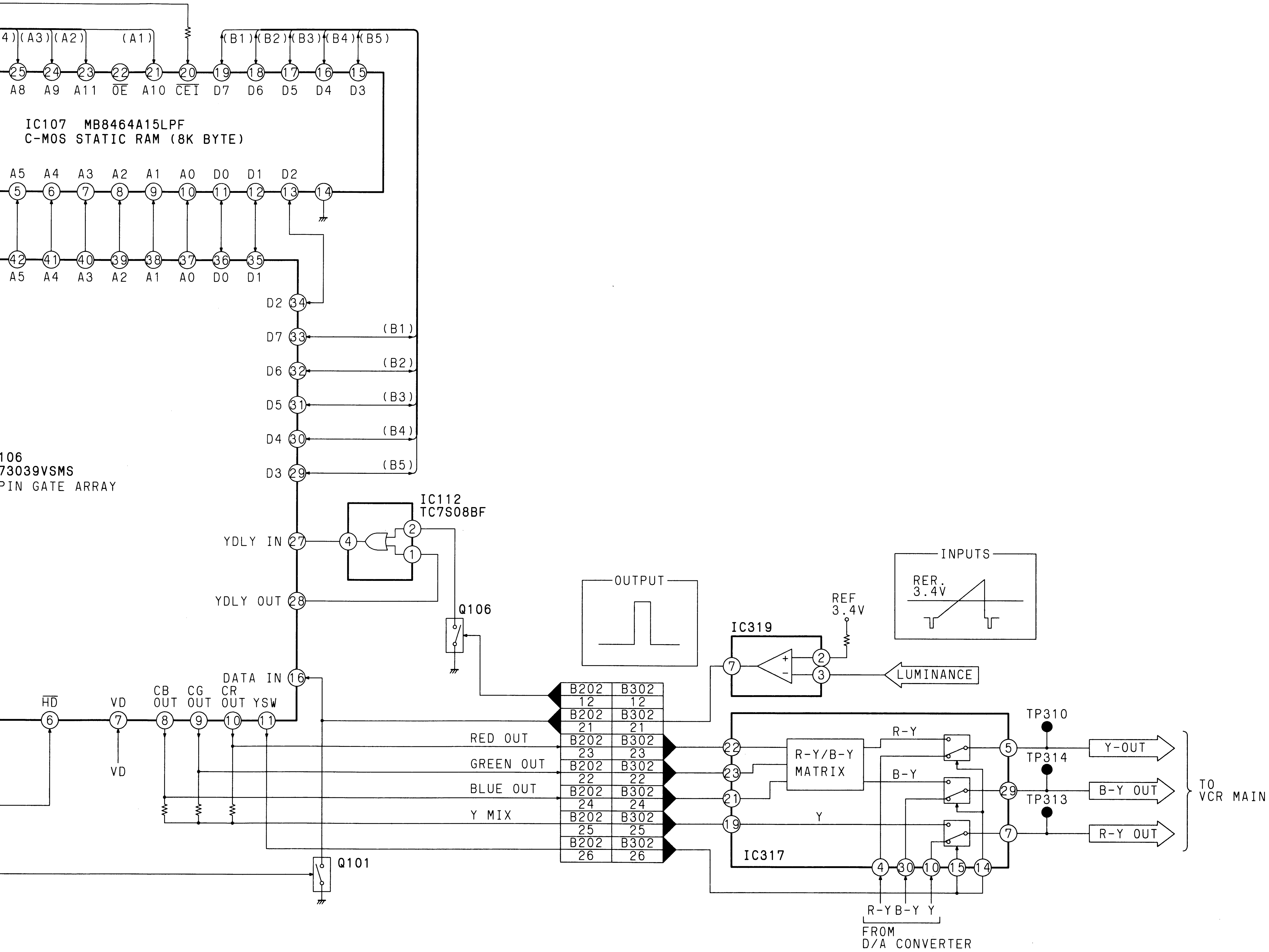

IC709
ZOOM ENCODER CONTROL
TO LENS
V-REF(-)
V-REF(+)
FP202 1
FP202 3
TP701
TP703
4.8V
VR709
VR710
4.8V
IC702
(A3) (A4) (A5) (A6)
FROM CCD BLOCK A
FROM CCD BLOCK B
AF SIGNAL
TP719
CL
VCC2
(A2)DC GC
DC CONT.
(A1)Y DET
ENCODER
H.LUM DETECT
CLAMP
6dB SW AMP
DC
Y
GATE
L-DET
VIREF
Y GAIN CONT
BUF
LPF
FL701
CONTRAST GAIN CONT
DC CONT
LEVEL CONT
DC CONT
1.8V
TP706
3.8V
2.8V
HOLE OUT(-)
HOLE OUT(+)
VDD
CP1
CP2
(B10)
(B9)
(B1)
(B2)
VR704
1.8V
HOLL AMP CONTROL
VR703
4.8V
HOLL AMP CONTROL
TP752 (GND)
IC701
1.8V
FP202 15
ALC CONT(-)
FP202 16
ALC CONT(+)
HALL ELEMENT
M
IRIS MOTOR
TP751
FP202 13
ALC MAIN(+)
Q705(DRIVE)
REG
TP750
HOLE IN(-)
FP202 18
HOLE OUT(-)
FP202 19
HOLE OUT(+)
FP202 17
HOLE IN(+)
FP202 20
4.6V
B302 6
B202 6
PWM
VR705
4.6V
PWM CONTROL
CONTROL SIGNAL FROM IC310 PIN ㊵
12
13
FP302 B301 B201
12 11 11
FP302 B301 B201
13 12 12
FP301 B301 B201
5 5 5
FP301 B301 B201
4 4 4
FROM VCR MAIN
WIDE
TELE
TP718
TP717
(B5)
(B6)
(B7)
(B8)
IC703
4.8V
3.8V
TP709
3.8V
1.8V
1.8V
M.Z1
M.Z2
ZOOM1
ZOOM2
DC DET.
F/NO
INPUT CGC
YGC2
YGC1
YGC0
VDD
MF.NEAR
MF.FAR
(A1)
(A3)
(A4)
(A5)
(A6)
(A2)
A/D 6bit
A/D 8bit
D/A 4bit
ZSW1
ZSW0
ZM03
ZM02
ZM01
ZM00
(B5)(B6)
(B7)(B8)
(C1)(C2)
(E1)

Back Page:
PROCESS Section

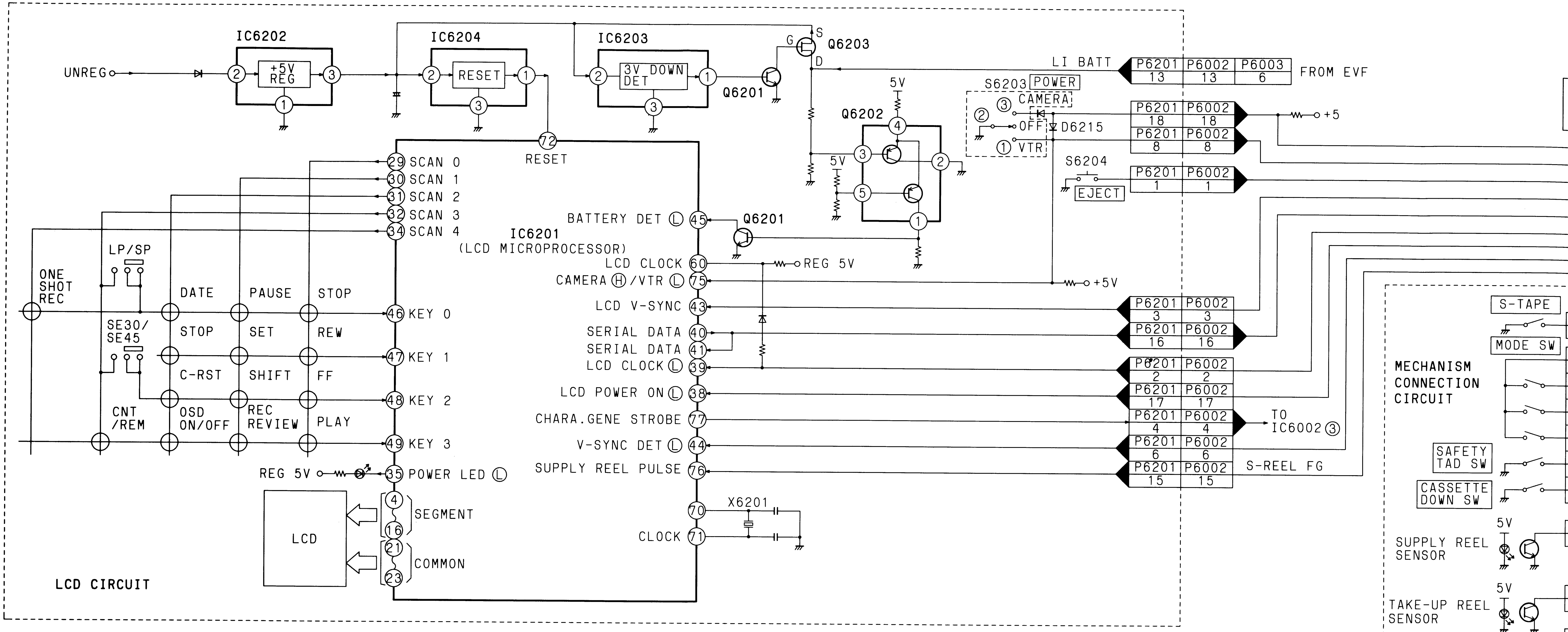

HIGH LUMINANCE SIGNAL
B202 13 B302 13
B202 8 B302 8
IC105
RESET
VDD
Q704
SWITCHING
IC704
(FOCUS STEPPING MOTOR DRIVE)
VDD UNREG
(D1)
(D2)
(D3)
(D4)
VDD(5V)
CLOCK1
DECODER
DRIVER
NORMAL /REV
OSC
ENABLE RESET
UNREG
TP709
3.8V
TP710
1.8V
C703
4.8V
C721 6.75MHz
M.Z1
M.Z2
ZOOM1
ZOOM2
DC DET.
F/NO
INPUT CGC
YGC2
YGC1
YGC0
MF.NEAR
MF.FAR
V.1N
A/D 6bit
DSP (DIGITAL SIGNAL PROCESS)
A/D 8bit
D/A 4bit
GATE (AF ZONE CONTROL)
U-COM ROM:12KB RAM:384B
AF/MF SW
HSS Ⓗ
HILHT
CP1
CP2
TP210
(B202-26)
VD FROM SSG
TP711
WHD (B202-7) FROM SSG
CLK256
TP714
TP712
FOCUS POSITION
SMT0
SMT1
SB0
SBT
TP715
TP716
GND
8MHz
ZSW1
ZSW0
ZM03
ZM02
ZM01
ZM00
DCGC
LED CONT
AF DRIVE1
AF DRIVE2
STM3
STM2
OCS0
OCS1
(B7) (B8) (B3)
(C1) (C2) (C3) (C4) (C5) (C6)
(E1) (E2)
(B10) (B9) (B4) (C8) (C7)
IC710
(4bit MICRO PROCESSOR)
P11 P12 P13
P10 P02 P00 P01
P30 P31 P32 P33
PXI(IRO)
RESET
VSS OSC0 OSC1
VDD
X702 4.19MHz
(B2) ZOOM2
FP202 2
IC709
TP702
(B1) ZOOM1
(B3) LED DRIVE Q701
FP202 6
(B4) F.ENC
FP202 5
FP202 9 FMT 2
FP202 11 FMT 4
FP202 10 FMT 1
FP202 12 FMT 3
IC705
TELE
WIDE
FOCUS ENCODER
ZOOM ENCODER
TO CCD DRIVE C.B.A.
CCD
FOCUS MOTOR (STEPPING MOTOR)
ZOOM MOTOR (DC MOTOR)
M
LOGIC
(ZOOM MOTOR DRIVE)
ZOOM MOTOR(-)
FP202 8
FP202 7

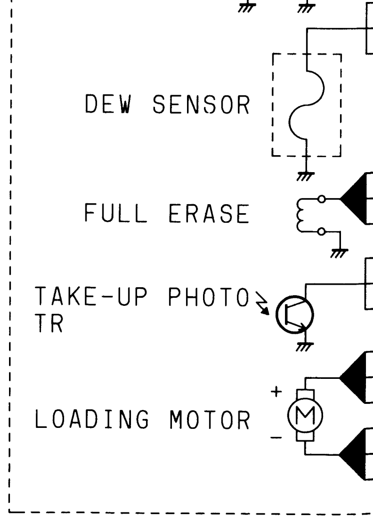
3-4. DIGITAL MEMORY BLOCK DIAGRAM


Q130.131
REG 5V
SWITCHING
Q103.110.104
SWITCHING
B302 20
B202 20
3V CELL
(TITLE MEMORY BATTERY)
IC105
(S8054ALB)
(BACK UP)
5V
RESET
Q105
SWITCHING
TP311
B302 19
B202 19
Q102
TO VCR MAIN
B302 17
B202 17
(VD EVF)
18
16 SI OUT
8 RESET
X101
8MHz
10
11
IC104
(MN1551VFMA)
4bit
MICRO PROCESSOR
IC310
PIN 40
MEMORY
TITLE FUNCTION ON/OFF
TITLE COLOUR
MODE
2 FP302 2 B302 3 B202 3
7 FP302 7 B302 30 B202 30
6 FP302 6 B302 2 B202 2
9 FP302 9 B302 1 B202 1
30 MEMORY
31 DIGITAL ON/OFF
32 COLOUR
1 MODE
P00 20
P02 22
P03 23
P01 21
P12 28
P33 5
P32 4
P31 3
P30 2
IC201
HD
26 REVERCE 27
IC108
(TC7S08F)
BUFFER
1
2
4
(A5)
(A4)
(A3)
(A2)
(A1)
(B1
28 VCC
27 WE
26 CEI
25 A8
24 A9
23 A11
22 OE
21 A10
20 CEI
19 D7
IC107 MB8464A15LPF
C-MOS STATIC RAM (8K BYTE)
A12 2
A7 3
A6 4
A5 5
A4 6
A3 7
A2 8
A1 9
A0 10
D0 11
(A1)
(A2)
48 A11
46 A10
45 A12
44 A7
43 A6
42 A5
41 A4
40 A3
39 A2
38 A1
37 A0
36 D0
(A3) 49 A9
(A4) 50 A8
(A5) 51 WE
52 CLOCK
53 MEMORY
54 OEI
55 MODE2
58 MODE1
59 NEGA/POSI
60 B1
61 G1
62 R1
IC106
MN73039VSMS
64PIN GATE ARRAY
YDL
YDLY
OSCILLATION
64
1
TP101
X102
C120
HD 6
VD 7
VD
CB OUT 8
CG OUT 9
DAT
CR OUT 10


IC107 MB8464A15LPF
C-MOS STATIC RAM (8K BYTE)
A8 A9 A11 OE A10 CEI D7 D6 D5 D4 D3
(A3) (A2) (A1)
(B1) (B2) (B3) (B4) (B5)
A5 A4 A3 A2 A1 A0 D0 D1 D2
106
73039VSMS
PIN GATE ARRAY
D2 D7 D6 D5 D4 D3
YDLY IN
YDLY OUT
DATA IN
HD VD CB OUT CG OUT CR OUT YSW
VD
IC112
TC7S08BF
Q106
Q101
OUTPUT
IC319
REF 3.4V
INPUTS
RER. 3.4V
LUMINANCE
B202 B302
RED OUT
GREEN OUT
BLUE OUT
Y MIX
IC317
R-Y/B-Y MATRIX
R-Y
B-Y
Y
TP310
TP314
TP313
Y-OUT
B-Y OUT
R-Y OUT
TO VCR MAIN
R-Y B-Y Y
FROM D/A CONVERTER

3-5. SYSTEM CONTROL BLOCK DIAGRAM


IC6202
UNREG
+5V REG
IC6204
RESET
IC6203
3V DOWN DET
Q6203
G
S
D
Q6201
Q6202
5V
LI BATT
P6201 P6002 P6003
13 13 6
FROM EVF
S6203 POWER
CAMERA
OFF
VTR
D6215
+5
S6204
EJECT
72 RESET
29 SCAN 0
30 SCAN 1
31 SCAN 2
32 SCAN 3
34 SCAN 4
IC6201
(LCD MICROPROCESSOR)
BATTERY DET Ⓛ 45
LCD CLOCK 60
REG 5V
CAMERA Ⓗ/VTR Ⓛ 75
+5V
LCD V-SYNC 43
SERIAL DATA 40
SERIAL DATA 41
LCD CLOCK Ⓛ 39
LCD POWER ON Ⓛ 38
CHARA.GENE STROBE 77
TO IC6002 ③
V-SYNC DET Ⓛ 44
SUPPLY REEL PULSE 76
S-REEL FG
X6201
70
CLOCK 71
LP/SP
ONE SHOT REC
SE30/SE45
CNT /REM
DATE
PAUSE
STOP
SET
REW
C-RST
SHIFT
FF
OSD ON/OFF
REC REVIEW
PLAY
46 KEY 0
47 KEY 1
48 KEY 2
49 KEY 3
REG 5V
35 POWER LED Ⓛ
LCD
4
16
SEGMENT
21
23
COMMON
LCD CIRCUIT
S-TAPE
MODE SW
MECHANISM CONNECTION CIRCUIT


SAFETY TAD SW
CASSETTE DOWN SW
5V
SUPPLY REEL SENSOR
TAKE-UP REEL SENSOR
DEW SENSOR
FULL ERASE
TAKE-UP PHOTO TR
LOADING MOTOR
M

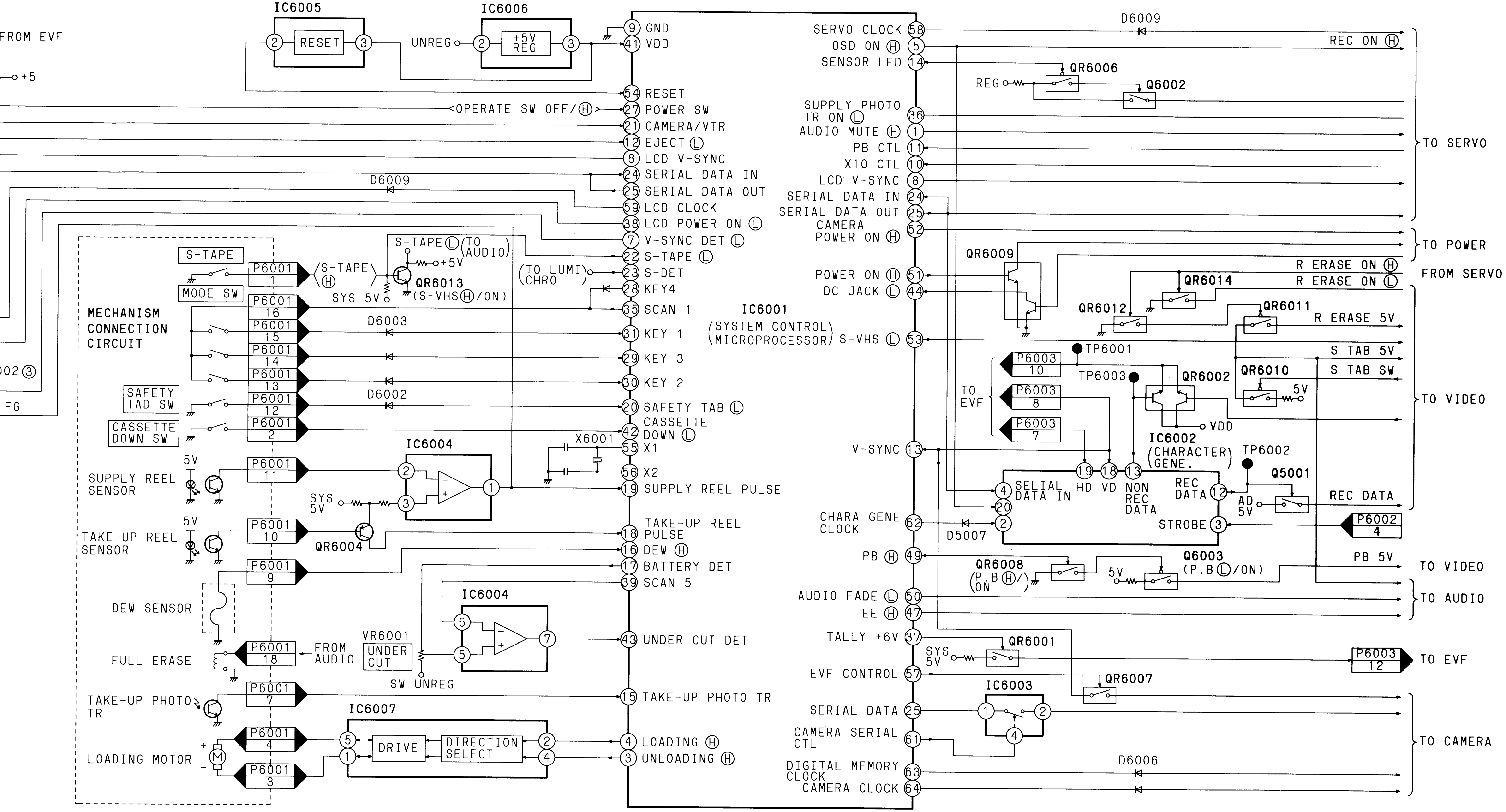
IC6201 KEY MATRIX CHART

KEY DATA IN \ SCAN OUT	SCAN 0 (PIN 29)	SCAN 1 (PIN 30)	SCAN 2 (PIN 31)	SCAN 3 (PIN 32)	SCAN 4 (PIN 33)
KEY 0 (PIN 46)	STOP	PAUSE	DATE	LP/SP	ONE-SHOT REC
KEY 1 (PIN 47)	REW	SET	STOP	——	——
KEY 2 (PIN 48)	FF	SHIFT	COUNTER RESET	SE30/SE45	——
KEY 3 (PIN 49)	PLAY	REC REVIEW	OSD ON/OFF	COUNTER /MEMORY	——

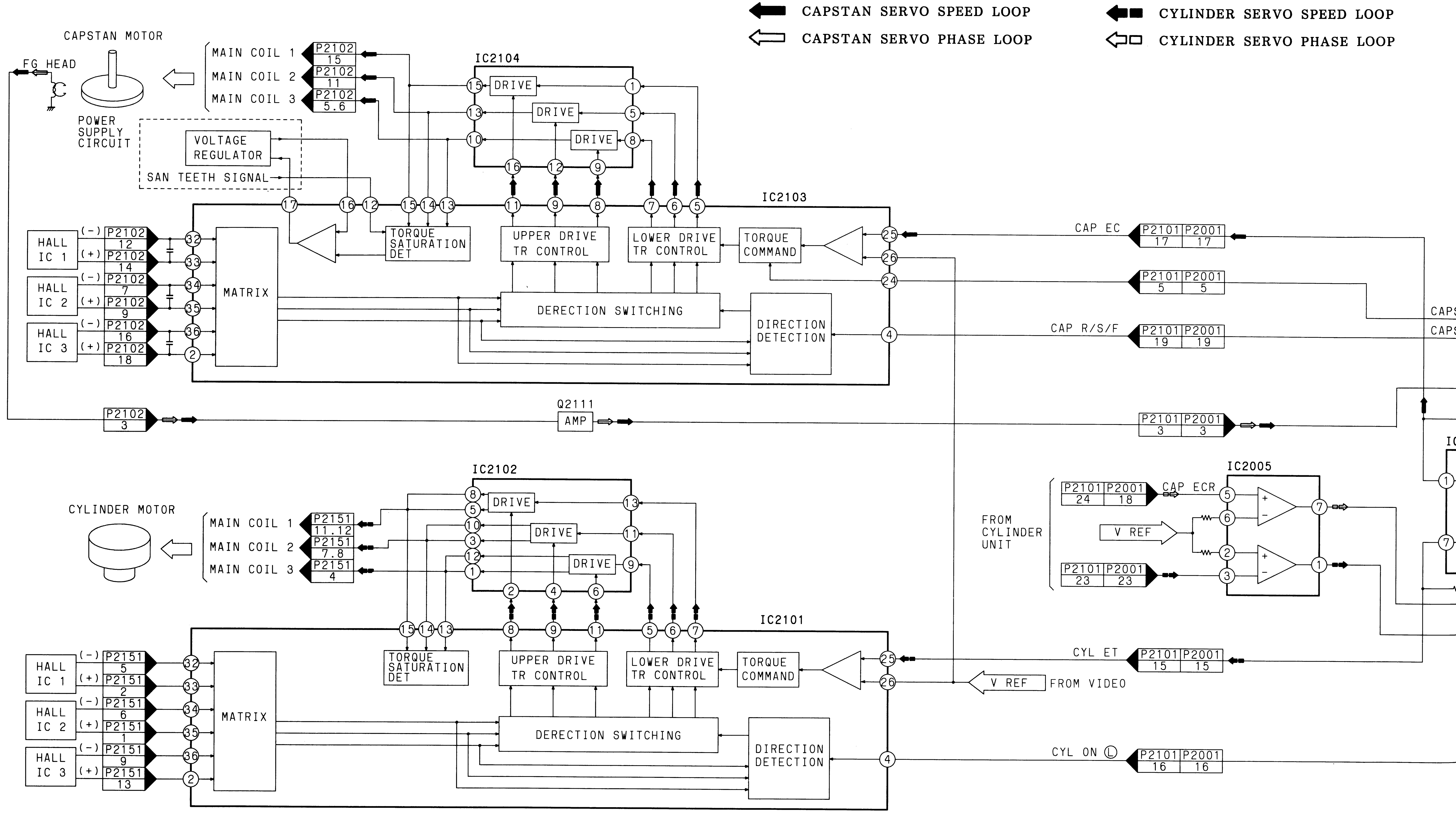
IC6001 KEY MATRIX CHART

KEY DATA IN \ SCAN OUT	SCAN 1 (PIN 35)	SCAN 4 (PIN 32)
KEY 1 (PIN 31)	MODE 1	——
KEY 2 (PIN 30)	MODE 2	——
KEY 3 (PIN 29)	MODE 3	STOP /START
KEY 4 (PIN 28)	——	CAMERA TEST

Back Page:
DIGITAL MEMORY Section

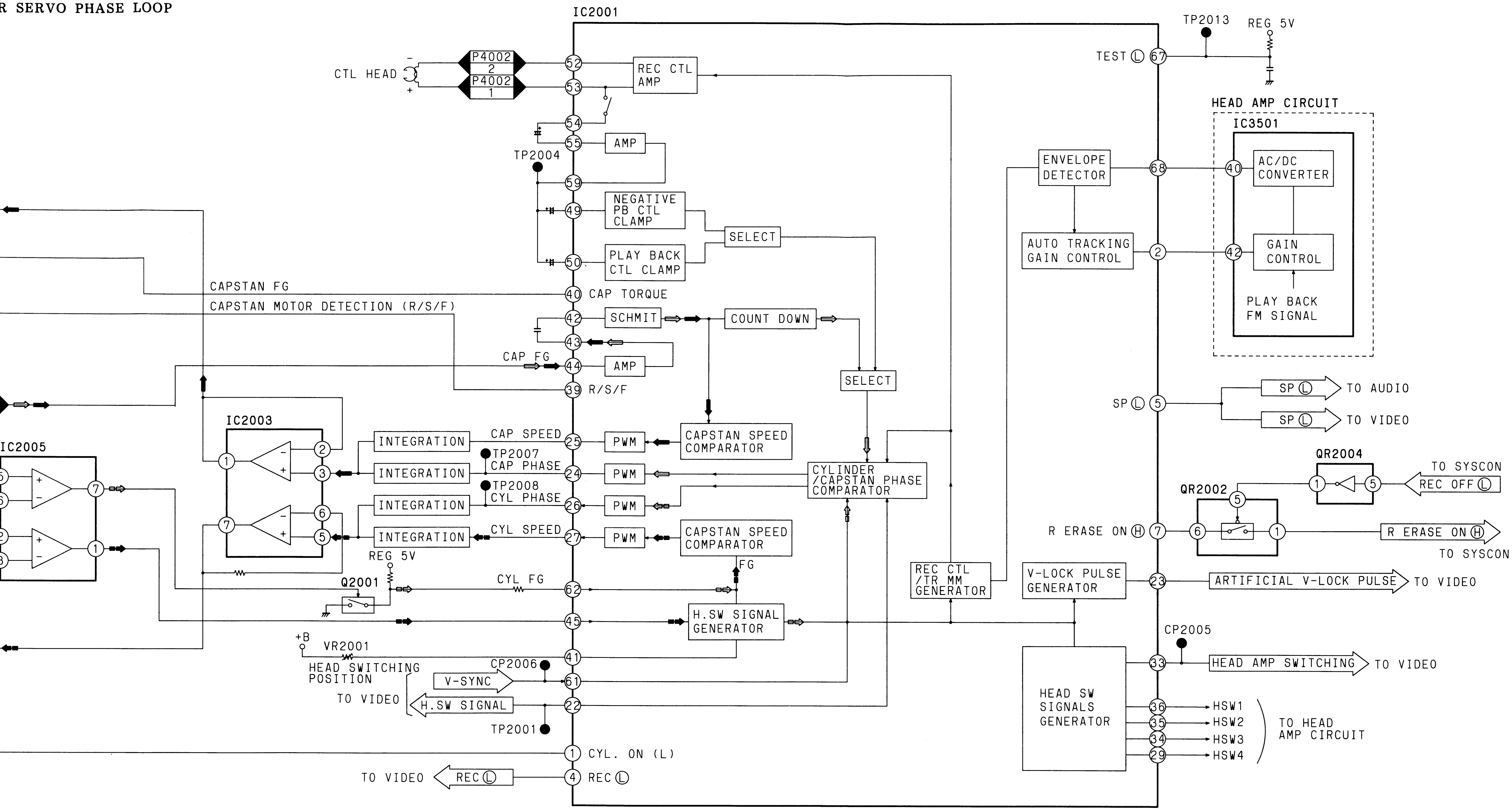

IC6005
RESET
IC6006
+5V REG
UNREG
FROM EVF
+5
D6009
OPERATE SW OFF/Ⓗ
S-TAPE
MODE SW
P6001
S-TAPE Ⓗ
S-TAPE Ⓛ (TO AUDIO)
+5V
QR6013
(S-VHS Ⓗ/ON)
SYS 5V
(TO LUMI CHRO)
MECHANISM CONNECTION CIRCUIT
D6003
D6002
SAFETY TAD SW
CASSETTE DOWN SW
02 ③
FG
IC6004
X6001
5V
SUPPLY REEL SENSOR
SYS 5V
TAKE-UP REEL SENSOR
QR6004
DEW SENSOR
FULL ERASE
FROM AUDIO
VR6001
UNDER CUT
SW UNREG
TAKE-UP PHOTO TR
IC6007
DRIVE
DIRECTION SELECT
LOADING MOTOR
IC6001
(SYSTEM CONTROL MICROPROCESSOR)
9 GND
41 VDD
54 RESET
27 POWER SW
21 CAMERA/VTR
12 EJECT Ⓛ
8 LCD V-SYNC
24 SERIAL DATA IN
25 SERIAL DATA OUT
59 LCD CLOCK
38 LCD POWER ON Ⓛ
7 V-SYNC DET Ⓛ
22 S-TAPE Ⓛ
23 S-DET
28 KEY4
35 SCAN 1
31 KEY 1
29 KEY 3
30 KEY 2
20 SAFETY TAB Ⓛ
42 CASSETTE DOWN Ⓛ
55 X1
56 X2
19 SUPPLY REEL PULSE
18 TAKE-UP REEL PULSE
16 DEW Ⓗ
17 BATTERY DET
39 SCAN 5
43 UNDER CUT DET
15 TAKE-UP PHOTO TR
4 LOADING Ⓗ
3 UNLOADING Ⓗ
SERVO CLOCK 58
OSD ON Ⓗ 5
SENSOR LED 14
SUPPLY PHOTO TR ON Ⓛ 36
AUDIO MUTE Ⓗ 1
PB CTL 11
X10 CTL 10
LCD V-SYNC 8
SERIAL DATA IN 24
SERIAL DATA OUT 25
CAMERA POWER ON Ⓗ 52
POWER ON Ⓗ 51
DC JACK Ⓛ 44
S-VHS Ⓛ 53
V-SYNC 13
CHARA GENE CLOCK 62
PB Ⓗ 49
AUDIO FADE Ⓛ 50
EE Ⓗ 47
TALLY +6V 37
EVF CONTROL 57
SERIAL DATA 25
CAMERA SERIAL CTL 61
DIGITAL MEMORY CLOCK 63
CAMERA CLOCK 64
REC ON Ⓗ
REG
QR6006
Q6002
TO SERVO
TO POWER
QR6009
R ERASE ON Ⓗ
R ERASE ON Ⓛ
FROM SERVO
QR6014
QR6012
QR6011
R ERASE 5V
TP6001
P6003
TO EVF
TP6003
QR6002
QR6010
S TAB 5V
S TAB SW
5V
TO VIDEO
VDD
IC6002
(CHARACTER GENE.)
TP6002
Q5001
SELIAL DATA IN
HD
VD
NON REC DATA
REC DATA
STROBE
AD 5V
REC DATA
P6002
D5007
QR6008
(P.B Ⓗ/ON)
Q6003
(P.B Ⓛ/ON)
PB 5V
TO VIDEO
TO AUDIO
QR6001
SYS 5V
TO EVF
QR6007
IC6003
TO CAMERA
D6006

3-6. SERVO BLOCK DIAGRAM


CAPSTAN SERVO SPEED LOOP
CAPSTAN SERVO PHASE LOOP
CYLINDER SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP
CAPSTAN MOTOR
FG HEAD
POWER SUPPLY CIRCUIT
VOLTAGE REGULATOR
SAN TEETH SIGNAL
MAIN COIL 1
MAIN COIL 2
MAIN COIL 3
P2102 15
P2102 11
P2102 5.6
IC2104
DRIVE
DRIVE
DRIVE
IC2103
HALL IC 1
HALL IC 2
HALL IC 3
(-)
(+)
P2102 12
P2102 14
P2102 7
P2102 9
P2102 16
P2102 18
MATRIX
TORQUE SATURATION DET
UPPER DRIVE TR CONTROL
LOWER DRIVE TR CONTROL
TORQUE COMMAND
DERECTION SWITCHING
DIRECTION DETECTION
CAP EC
P2101 17
P2001 17
P2101 5
P2001 5
CAP R/S/F
P2101 19
P2001 19
CAPS
CAPS
P2102 3
Q2111
AMP
P2101 3
P2001 3
IC
IC2005
FROM CYLINDER UNIT
P2101 24
P2001 18
CAP ECR
V REF
P2101 23
P2001 23
IC2102
CYLINDER MOTOR
P2151 11.12
P2151 7.8
P2151 4
IC2101
P2151 5
P2151 2
P2151 6
P2151 1
P2151 9
P2151 13
CYL ET
P2101 15
P2001 15
V REF
FROM VIDEO
CYL ON Ⓛ
P2101 16
P2001 16

R SERVO SPEED LOOP

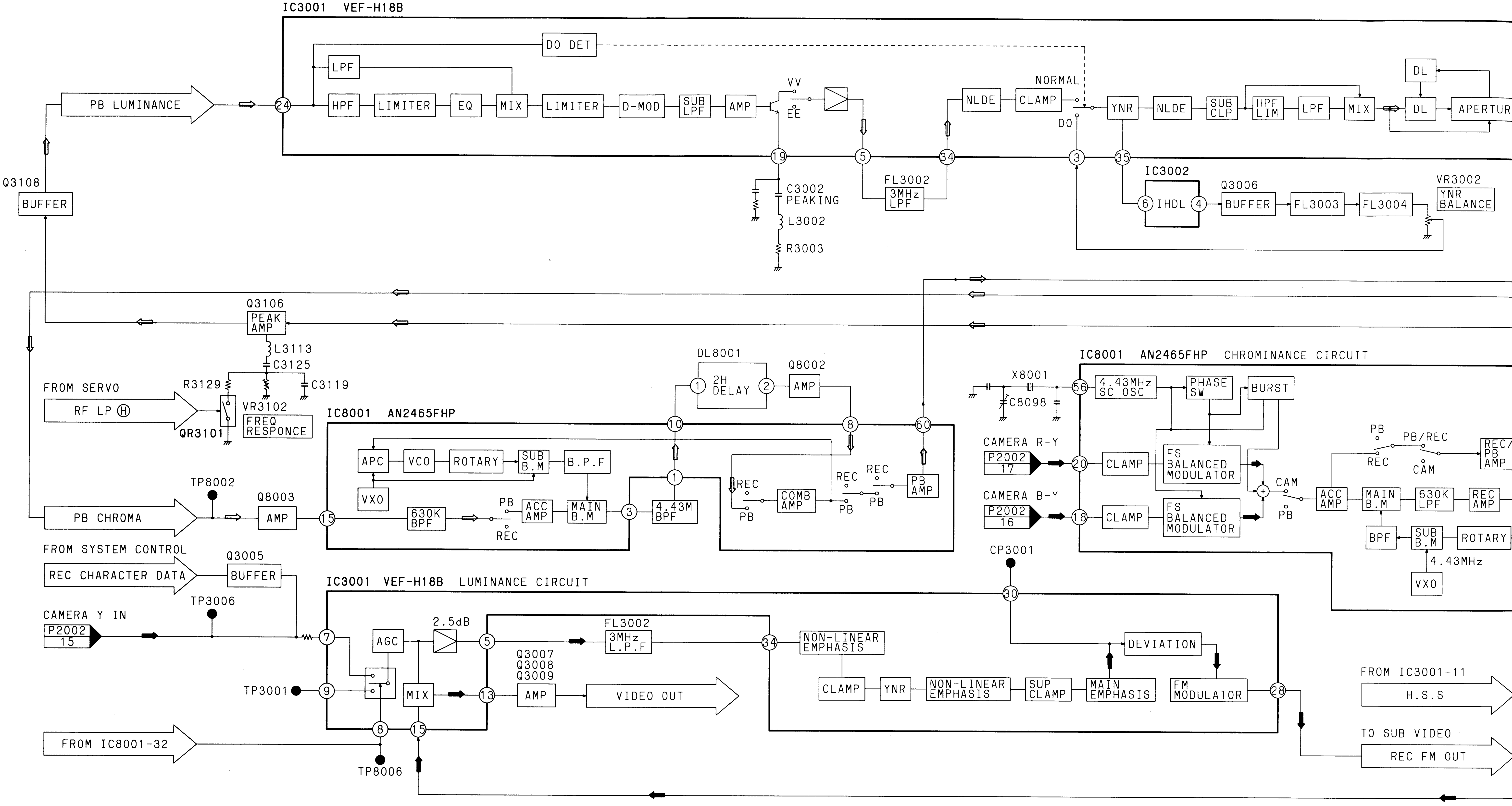
R SERVO PHASE LOOP


IC2001
CTL HEAD
P4002 2
P4002 1
REC CTL AMP
AMP
TP2004
NEGATIVE PB CTL CLAMP
PLAY BACK CTL CLAMP
SELECT
CAPSTAN FG
CAPSTAN MOTOR DETECTION (R/S/F)
CAP TORQUE
SCHMIT
COUNT DOWN
CAP FG
AMP
R/S/F
SELECT
IC2003
IC2005
INTEGRATION
CAP SPEED
TP2007
CAP PHASE
TP2008
CYL PHASE
CYL SPEED
PWM
CAPSTAN SPEED COMPARATOR
CYLINDER /CAPSTAN PHASE COMPARATOR
REG 5V
Q2001
CYL FG
FG
H.SW SIGNAL GENERATOR
+B
VR2001
HEAD SWITCHING POSITION
CP2006
V-SYNC
TO VIDEO
H.SW SIGNAL
TP2001
CYL. ON (L)
REC Ⓛ
TEST Ⓛ
TP2013
REG 5V
HEAD AMP CIRCUIT
IC3501
AC/DC CONVERTER
GAIN CONTROL
PLAY BACK FM SIGNAL
ENVELOPE DETECTOR
AUTO TRACKING GAIN CONTROL
SP Ⓛ
TO AUDIO
TO VIDEO
QR2004
QR2002
TO SYSCON
REC OFF Ⓛ
R ERASE ON Ⓗ
REC CTL /TR MM GENERATOR
V-LOCK PULSE GENERATOR
ARTIFICIAL V-LOCK PULSE
CP2005
HEAD AMP SWITCHING
HEAD SW SIGNALS GENERATOR
HSW1
HSW2
HSW3
HSW4
TO HEAD AMP CIRCUIT

3-7. LUMINANCE & CHROMINANCE BLOCK DIAGRAM

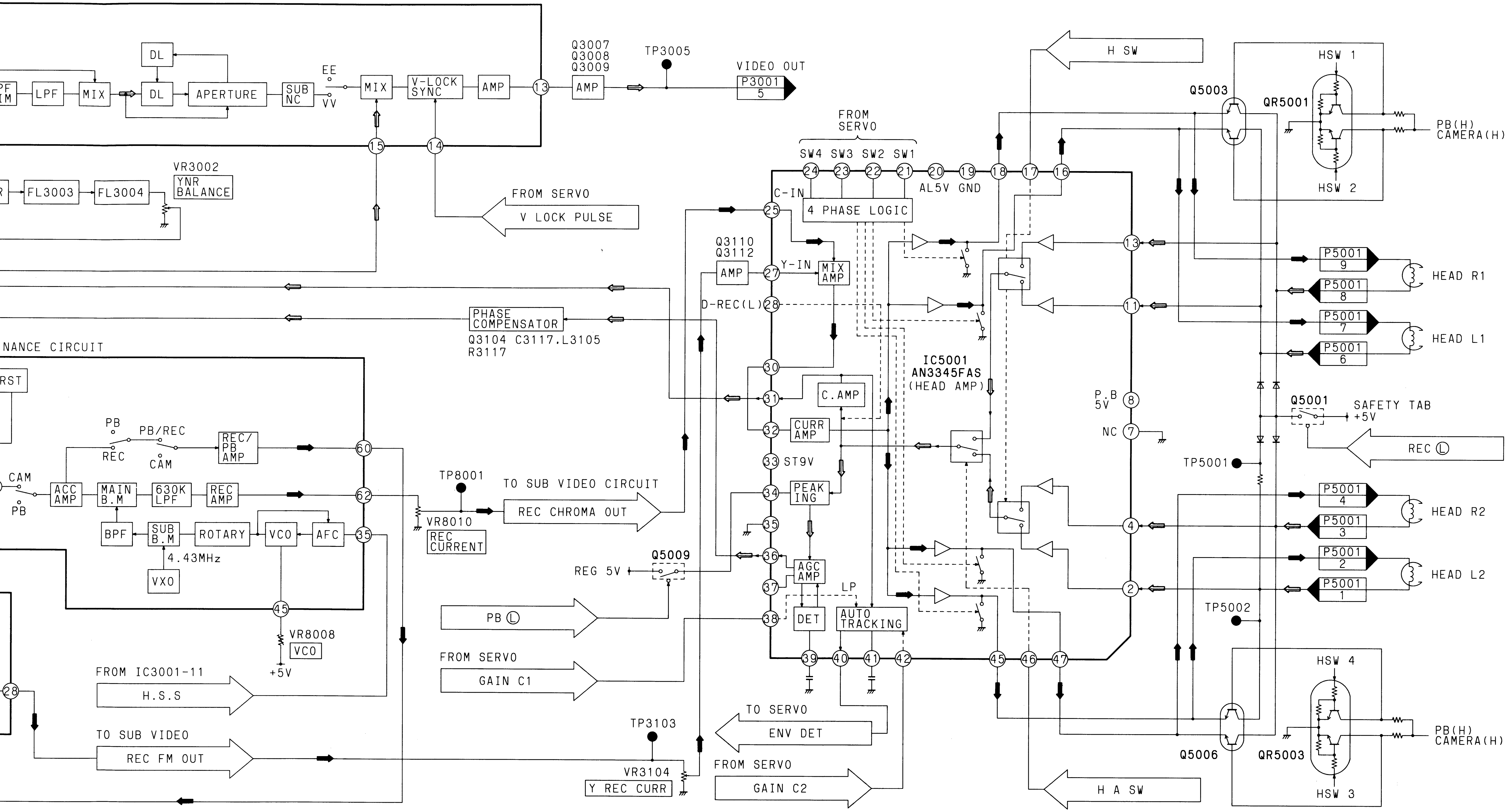
MAIN SIGNAL PATH IN REC MODE

MAIN SIGNAL PATH IN PLAYB


IC3001 VEF-H18B
DO DET
LPF
PB LUMINANCE
24
HPF
LIMITER
EQ
MIX
LIMITER
D-MOD
SUB LPF
AMP
VV
EE
NORMAL
NLDE
CLAMP
DO
YNR
NLDE
SUB CLP
HPF LIM
LPF
MIX
DL
DL
APERTUR
19
5
34
3
35
C3002 PEAKING
L3002
R3003
FL3002
3MHz LPF
IC3002
6
IHDL
4
Q3006
BUFFER
FL3003
FL3004
VR3002
YNR BALANCE
Q3108
BUFFER
Q3106
PEAK AMP
L3113
C3125
R3129
C3119
VR3102
FREQ RESPONCE
QR3101
FROM SERVO
RF LP Ⓗ
DL8001
1
2H DELAY
2
Q8002
AMP
IC8001 AN2465FHP
10
8
60
APC
VCO
ROTARY
SUB B.M
B.P.F
VXO
630K BPF
PB
REC
ACC AMP
MAIN B.M
3
1
4.43M BPF
REC
PB
COMB AMP
REC
PB
REC
PB
PB AMP
TP8002
Q8003
AMP
PB CHROMA
15
IC8001 AN2465FHP CHROMINANCE CIRCUIT
X8001
C8098
56
4.43MHz SC OSC
PHASE SW
BURST
CAMERA R-Y
P2002 17
20
CLAMP
FS BALANCED MODULATOR
CAMERA B-Y
P2002 16
18
CLAMP
FS BALANCED MODULATOR
CAM
PB
PB
PB/REC
REC
CAM
ACC AMP
MAIN B.M
630K LPF
REC AMP
REC/PB AMP
BPF
SUB B.M
ROTARY
4.43MHz
VXO
CP3001
FROM SYSTEM CONTROL
REC CHARACTER DATA
Q3005
BUFFER
IC3001 VEF-H18B LUMINANCE CIRCUIT
30
TP3006
CAMERA Y IN
P2002 15
7
AGC
2.5dB
5
FL3002
3MHz L.P.F
34
NON-LINEAR EMPHASIS
DEVIATION
TP3001
9
MIX
13
Q3007
Q3008
Q3009
AMP
VIDEO OUT
CLAMP
YNR
NON-LINEAR EMPHASIS
SUP CLAMP
MAIN EMPHASIS
FM MODULATOR
28
8
15
FROM IC8001-32
TP8006
FROM IC3001-11
H.S.S
TO SUB VIDEO
REC FM OUT

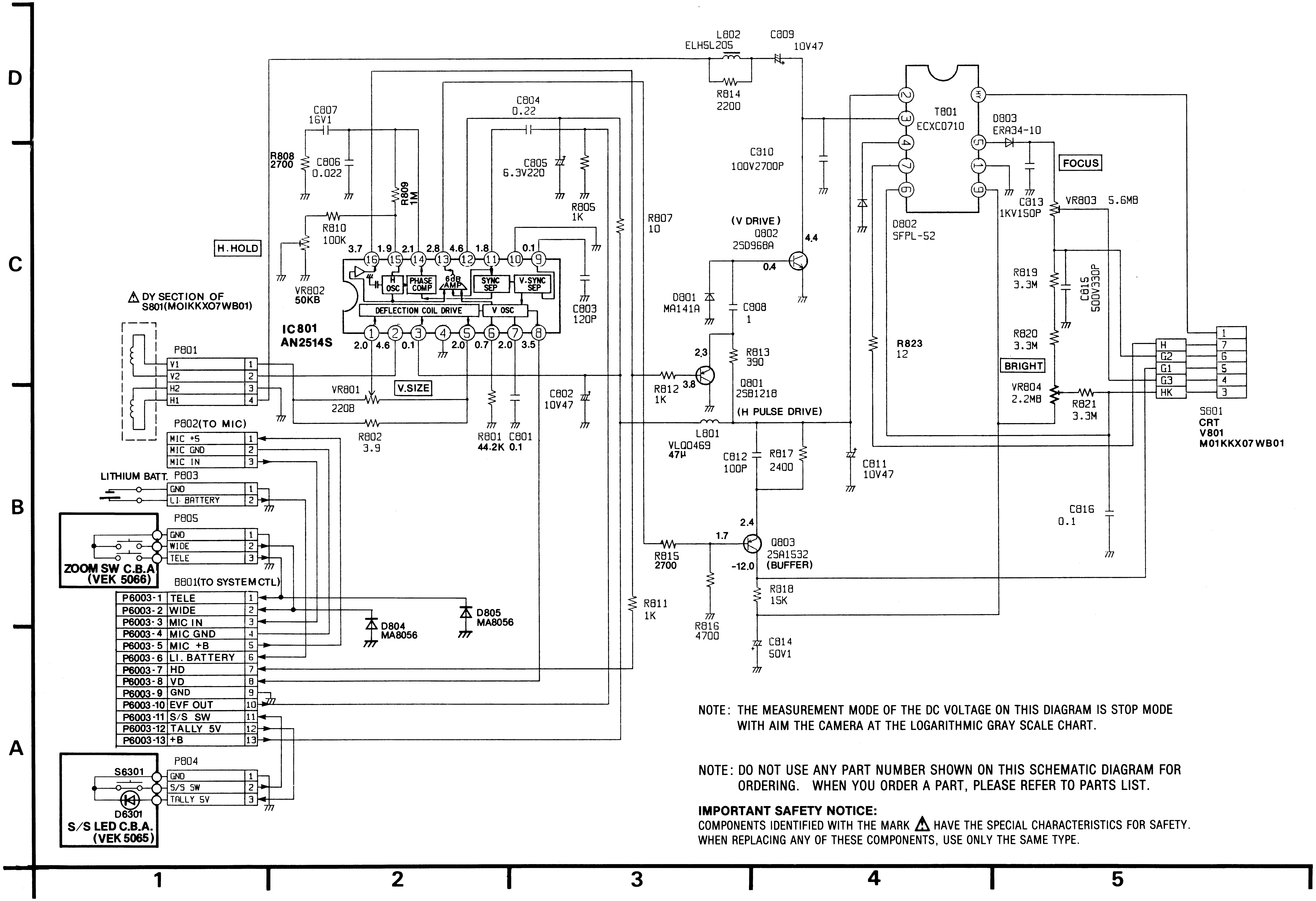
Back Page:
SERVO Section

MAIN SIGNAL PATH IN PLAYBACK MODE



DL
LPF
MIX
DL
APERTURE
SUB NC
EE
VV
MIX
V-LOCK SYNC
AMP
13
Q3007
Q3008
Q3009
AMP
TP3005
VIDEO OUT
P3001
5
15
14
VR3002
FL3003
FL3004
YNR BALANCE
FROM SERVO
V LOCK PULSE
PHASE COMPENSATOR
Q3104 C3117.L3105
R3117
NANCE CIRCUIT
RST
PB
PB/REC
REC
CAM
REC/PB AMP
60
CAM
PB
ACC AMP
MAIN B.M
630K LPF
REC AMP
62
BPF
SUB B.M
ROTARY
VCO
AFC
35
4.43MHz
VXO
45
VR8008
VCO
+5V
TP8001
VR8010
REC CURRENT
TO SUB VIDEO CIRCUIT
REC CHROMA OUT
REG 5V
Q5009
PB Ⓛ
FROM SERVO
GAIN C1
FROM IC3001-11
H.S.S
28
TO SUB VIDEO
REC FM OUT
TP3103
VR3104
Y REC CURR
TO SERVO
ENV DET
FROM SERVO
GAIN C2
FROM SERVO
SW4 SW3 SW2 SW1
24 23 22 21 20 19 18 17 16
AL5V GND
C-IN
25
4 PHASE LOGIC
Q3110
Q3112
AMP
27
Y-IN
MIX AMP
D-REC(L)
28
30
31
C.AMP
32
CURR AMP
33
ST9V
34
PEAK ING
35
36
AGC AMP
37
LP
38
DET
AUTO TRACKING
39 40 41 42 45 46 47
IC5001
AN3345FAS
(HEAD AMP)
13
11
P.B 5V
8
NC
7
4
2
H SW
H A SW
Q5003
QR5001
HSW 1
HSW 2
PB(H)
CAMERA(H)
P5001
9
HEAD R1
P5001
8
P5001
7
HEAD L1
P5001
6
Q5001
SAFETY TAB
+5V
REC Ⓛ
TP5001
P5001
4
HEAD R2
P5001
3
P5001
2
HEAD L2
P5001
1
TP5002
HSW 4
HSW 3
Q5006
QR5003
PB(H)
CAMERA(H)

3-8. E.V.F. SCHEMATIC DIAGRAM


D
C
B
A
1
2
3
4
5
L802
ELH5L205
C809
10V47
R814
2200
C807
16V1
C804
0.22
R808
2700
C806
0.022
C805
6.3V220
R809
1M
R805
1K
R810
100K
H.HOLD
VR802
50KB
IC801
AN2514S
H OSC
PHASE COMP
6dB AMP
SYNC SEP
V.SYNC SEP
DEFLECTION COIL DRIVE
V OSC
C803
120P
R807
10
⚠ DY SECTION OF
S801(MOIKKXO7WB01)
P801
V1
V2
H2
H1
VR801
2208
V.SIZE
R802
3.9
R801
44.2K
C801
0.1
C802
10V47
P802(TO MIC)
MIC +5
MIC GND
MIC IN
LITHIUM BATT.
P803
GND
LI. BATTERY
P805
GND
WIDE
TELE
ZOOM SW C.B.A
(VEK 5066)
B801(TO SYSTEM CTL)
P6003-1 TELE
P6003-2 WIDE
P6003-3 MIC IN
P6003-4 MIC GND
P6003-5 MIC +B
P6003-6 LI. BATTERY
P6003-7 HD
P6003-8 VD
P6003-9 GND
P6003-10 EVF OUT
P6003-11 S/S SW
P6003-12 TALLY 5V
P6003-13 +B
D804
MA8056
D805
MA8056
P804
S6301
GND
S/S SW
TALLY 5V
D6301
S/S LED C.B.A.
(VEK 5065)
(V DRIVE)
Q802
2SD968A
C810
100V2700P
D801
MA141A
C808
1
R813
390
Q801
2SB1218
(H PULSE DRIVE)
R812
1K
L801
VLQ0469
47µ
C812
100P
R817
2400
R815
2700
Q803
2SA1532
(BUFFER)
R816
4700
R818
15K
C814
50V1
R811
1K
T801
ECXC0710
D803
ERA34-10
FOCUS
C813
1KV150P
VR803 5.6MB
D802
SFPL-52
R819
3.3M
C815
500V330P
R820
3.3M
R823
12
BRIGHT
VR804
2.2MB
R821
3.3M
C811
10V47
C816
0.1
S801
CRT
V801
M01KKX07WB01
H
G2
G1
G3
HK
3.7
1.9
2.1
2.8
4.6
1.8
0.1
2.0
4.6
0.1
2.0
0.7
2.0
3.5
4.4
0.4
2.3
3.8
2.4
1.7
-12.0

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

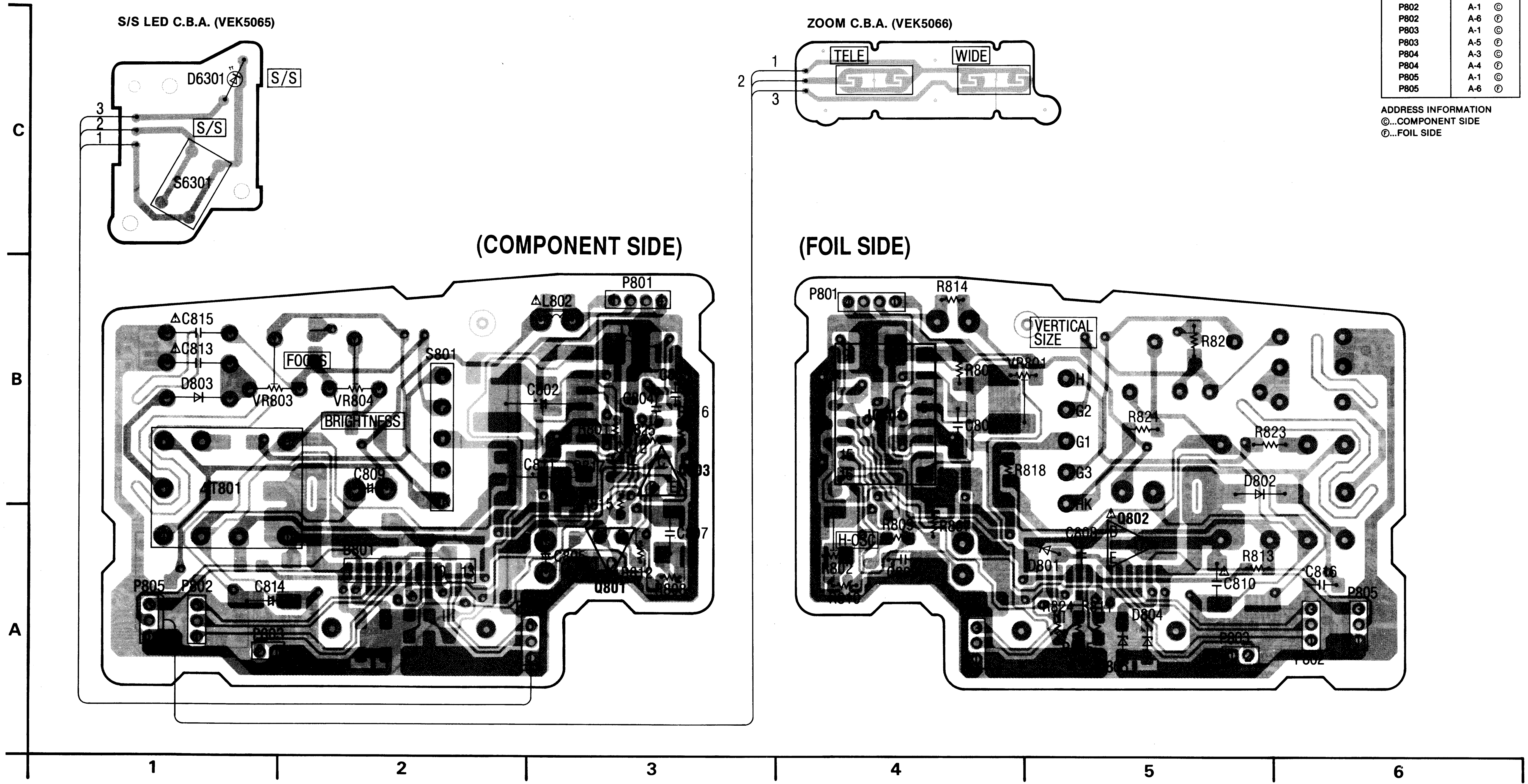
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

3-9. E.V.

3-9. E.V.F. C.B.A. (VEP28030B)

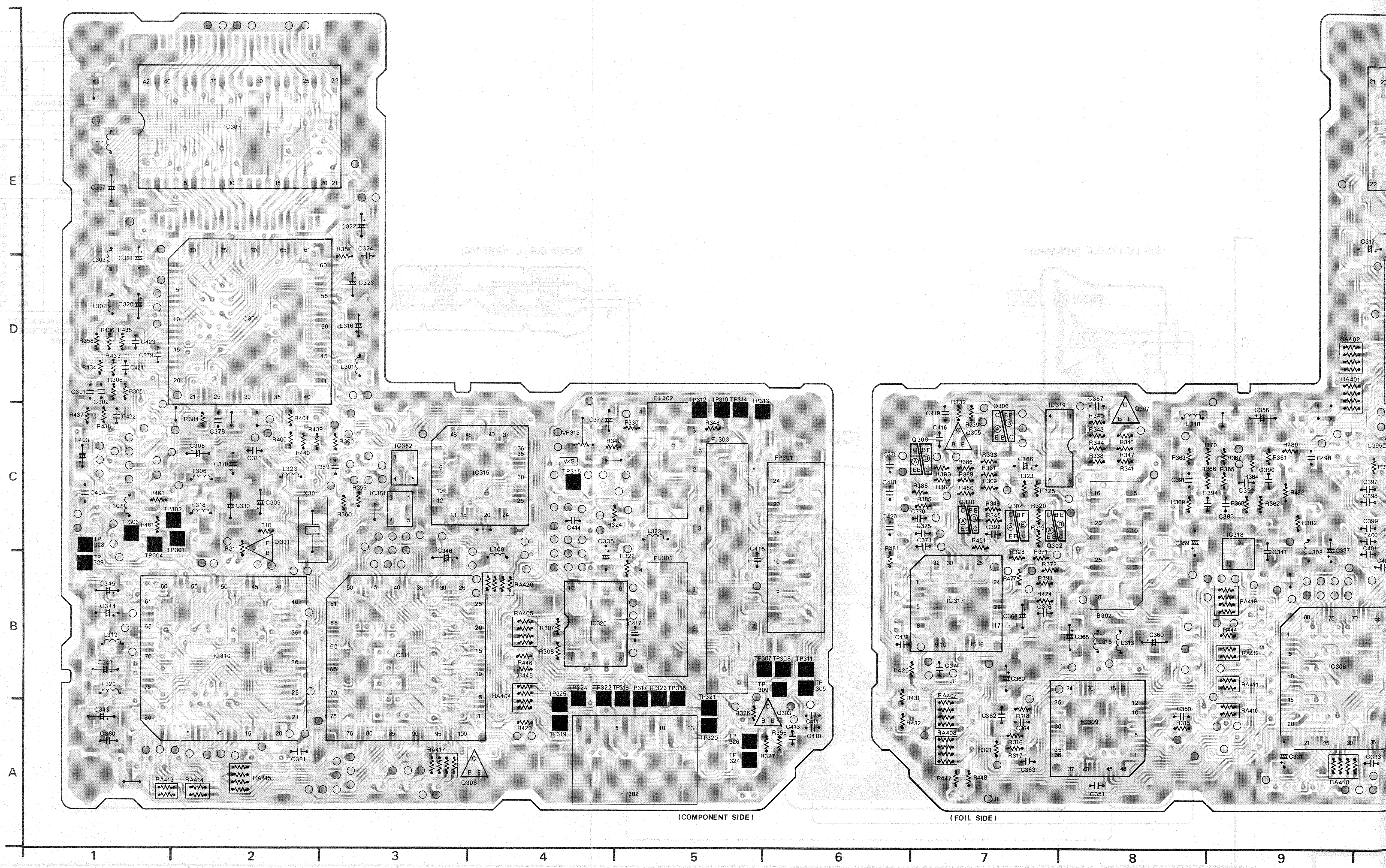
E.V.F. C.B.A.		
Transistor		
Q801	A-3	Ⓒ
Q802	A-5	Ⓕ
Q803	B-3	Ⓒ
Integrated Circuit		
IC801	B-4	Ⓕ
Adjustment		
VR801	B-4	Ⓕ
VR802	A-4	Ⓕ
VR803	B-1	Ⓒ
VR804	B-2	Ⓒ
Connector		
B801	A-2	Ⓒ
P801	B-3	Ⓒ
P801	B-4	Ⓕ
P802	A-1	Ⓒ
P802	A-6	Ⓕ
P803	A-1	Ⓒ
P803	A-5	Ⓕ
P804	A-3	Ⓒ
P804	A-4	Ⓕ
P805	A-1	Ⓒ
P805	A-6	Ⓕ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

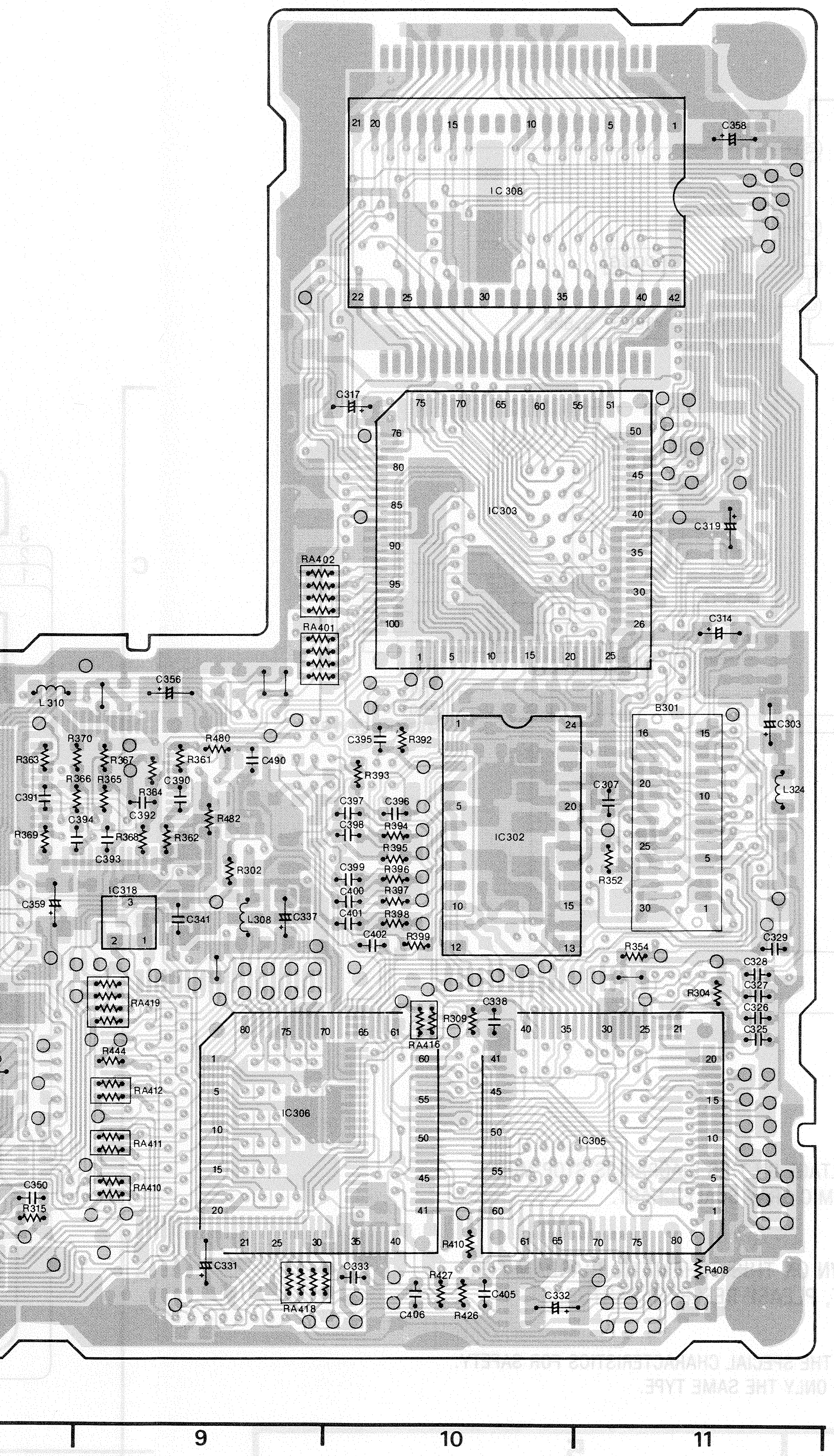


S/S LED C.B.A. (VEK5065)
ZOOM C.B.A. (VEK5066)
(COMPONENT SIDE)
(FOIL SIDE)
D6301
S/S
S/S
S6301
TELE
WIDE
1
2
3
C
B
A
1
2
3
4
5
6
ΔC815
ΔC813
D803
FOCUS
VR803
VR804
BRIGHTNESS
S801
ΔL802
P801
C802
C804
T801
C809
B801
P805
P802
C814
P803
Q801
Q803
C807
R814
VERTICAL SIZE
R820
VR801
H
G2
G1
G3
HK
R824
R823
R818
D802
Q802
C808
D801
H-OSC
R813
C810
C816
P805
D804
P802
P803

3-10. PROCESS C.B.A. (VEP23112A)


E
D
C
B
A
1
2
3
4
5
6
7
8
9
IC307
IC304
IC352
IC351
IC315
IC310
IC311
IC320
FL302
FL303
FL301
FP301
FP302
X301
Q301
Q303
Q308
VR313
V/S
TP315
RA420
RA405
RA404
RA417
RA413
RA414
RA415
(COMPONENT SIDE)
IC319
IC317
IC318
IC309
IC306
B302
Q306
Q305
Q307
Q309
Q310
Q304
Q302
RA402
RA401
RA419
RA407
RA408
RA418
(FOIL SIDE)

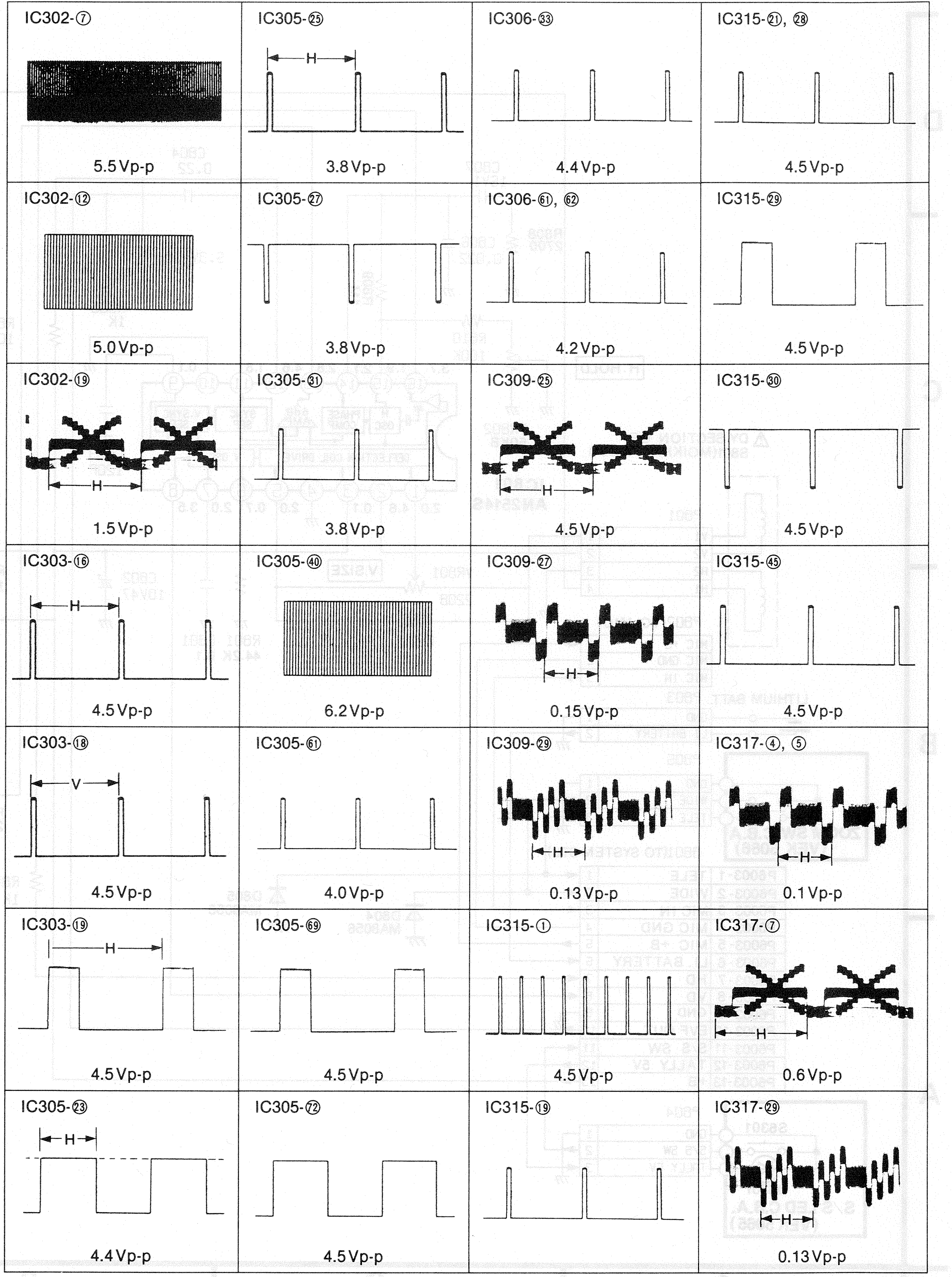
Back Page:
E.V.F. Section


IC306
IC303
IC302
IC305
IC318
IC306
B301
RA402
RA401
RA419
RA412
RA411
RA410
RA418
RA416
L310
L308
L324
C356
C358
C317
C319
C314
C303
C307
C331
C332
C333
C405
C406
R480
R392
R393
R352
R354
R304
R302
R408
R426
R427
R410
R315
9
10
11

PROCESS C.B.A.	
Transistor	
Q301	C-2 Ⓒ
Q302	C-7 Ⓕ
Q304	C-7 Ⓕ
Q305	C-7 Ⓕ
Q306	C-7 Ⓕ
Q307	C-8 Ⓕ
Q308	A-4 Ⓒ
Q309	C-7 Ⓕ
Q310	C-7 Ⓕ
Integrated Circuit	
IC302	C-10 Ⓕ
IC303	D-10 Ⓕ
IC304	D-2 Ⓒ
IC305	B-11 Ⓕ
IC306	B-9 Ⓕ
IC307	E-2 Ⓒ
IC308	E-10 Ⓕ
IC309	A-8 Ⓕ
IC310	B-2 Ⓒ
IC311	B-3 Ⓒ
IC315	C-4 Ⓒ
IC317	B-7 Ⓕ
IC318	C-9 Ⓕ
IC319	C-8 Ⓕ
IC320	B-4 Ⓒ
IC351	C-3 Ⓒ
IC352	C-3 Ⓒ
Test Point	
TP301	C-1 Ⓒ
TP302	C-1 Ⓒ
TP303	C-1 Ⓒ
TP304	C-1 Ⓒ
TP305	B-6 Ⓒ
TP306	B-6 Ⓒ
TP307	B-6 Ⓒ
TP308	B-6 Ⓒ
TP309	B-6 Ⓒ
TP310	D-5 Ⓒ
TP311	B-6 Ⓒ
TP312	D-5 Ⓒ
TP313	D-5 Ⓒ
TP314	D-5 Ⓒ
TP315	C-4 Ⓒ
TP316	B-5 Ⓒ
TP317	B-5 Ⓒ
TP318	B-5 Ⓒ
TP319	A-4 Ⓒ
TP320	A-5 Ⓒ
TP321	A-5 Ⓒ
TP322	B-4 Ⓒ
TP323	B-5 Ⓒ
TP324	B-4 Ⓒ
TP325	B-4 Ⓒ
TP326	A-5 Ⓒ
TP327	A-5 Ⓒ
TP328	C-1 Ⓒ
TP329	B-1 Ⓒ
Adjustment	
VR301	C-4 Ⓒ
Connector	
B301	C-11 Ⓕ
B302	B-8 Ⓕ
FP301	C-6 Ⓒ

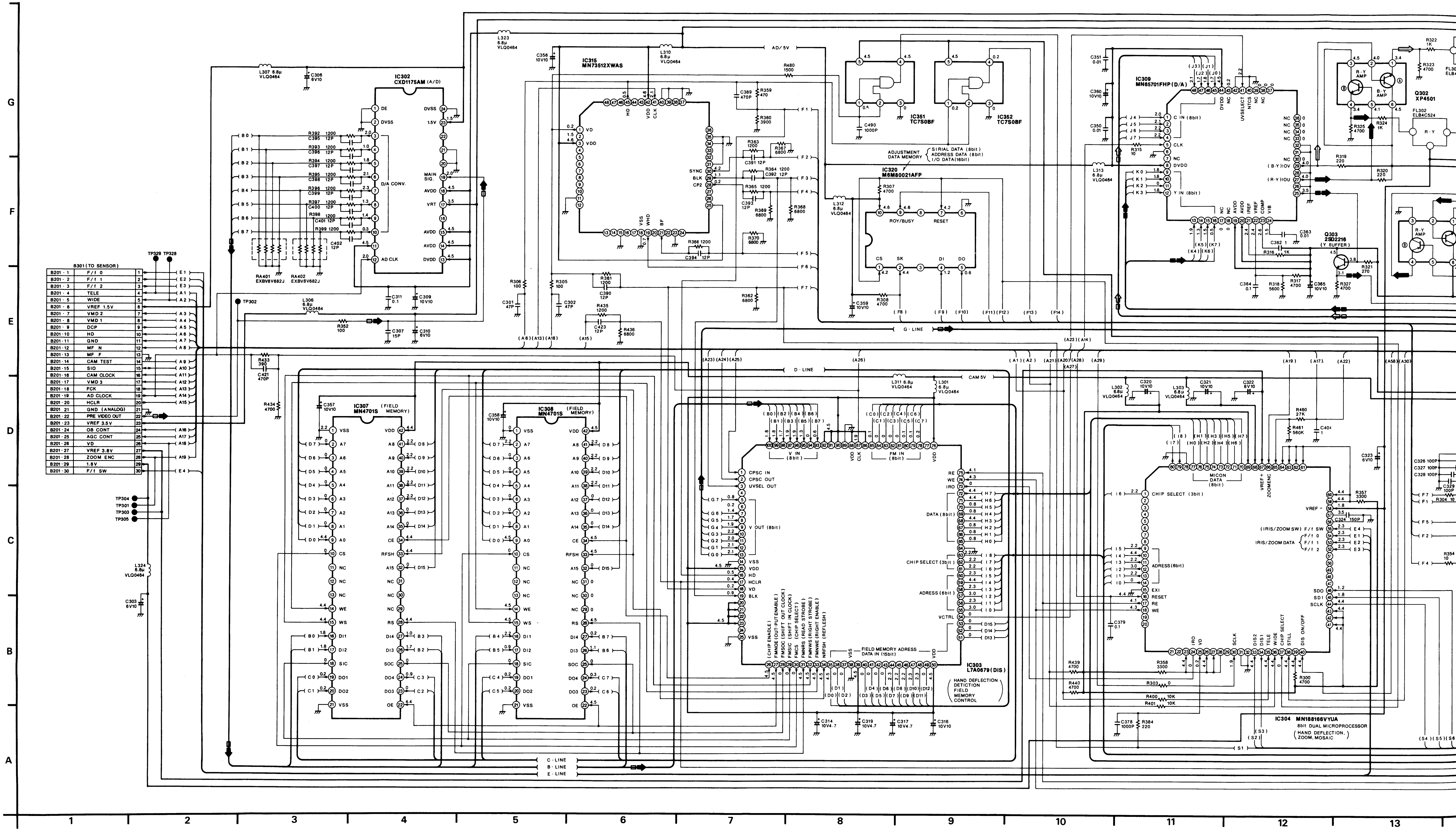
ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

PROCESS CIRCUIT WAVEFORM (STOP MODE)



3-11. PROCESS SCHEMATIC DIAGRAM

◀□ PRE VIDEO SIGNAL ◀■ LUMINANCE SIGNAL ⇦□ R-Y/B-Y COMPOSITE SIGNAL ◀ R-Y SIGNAL



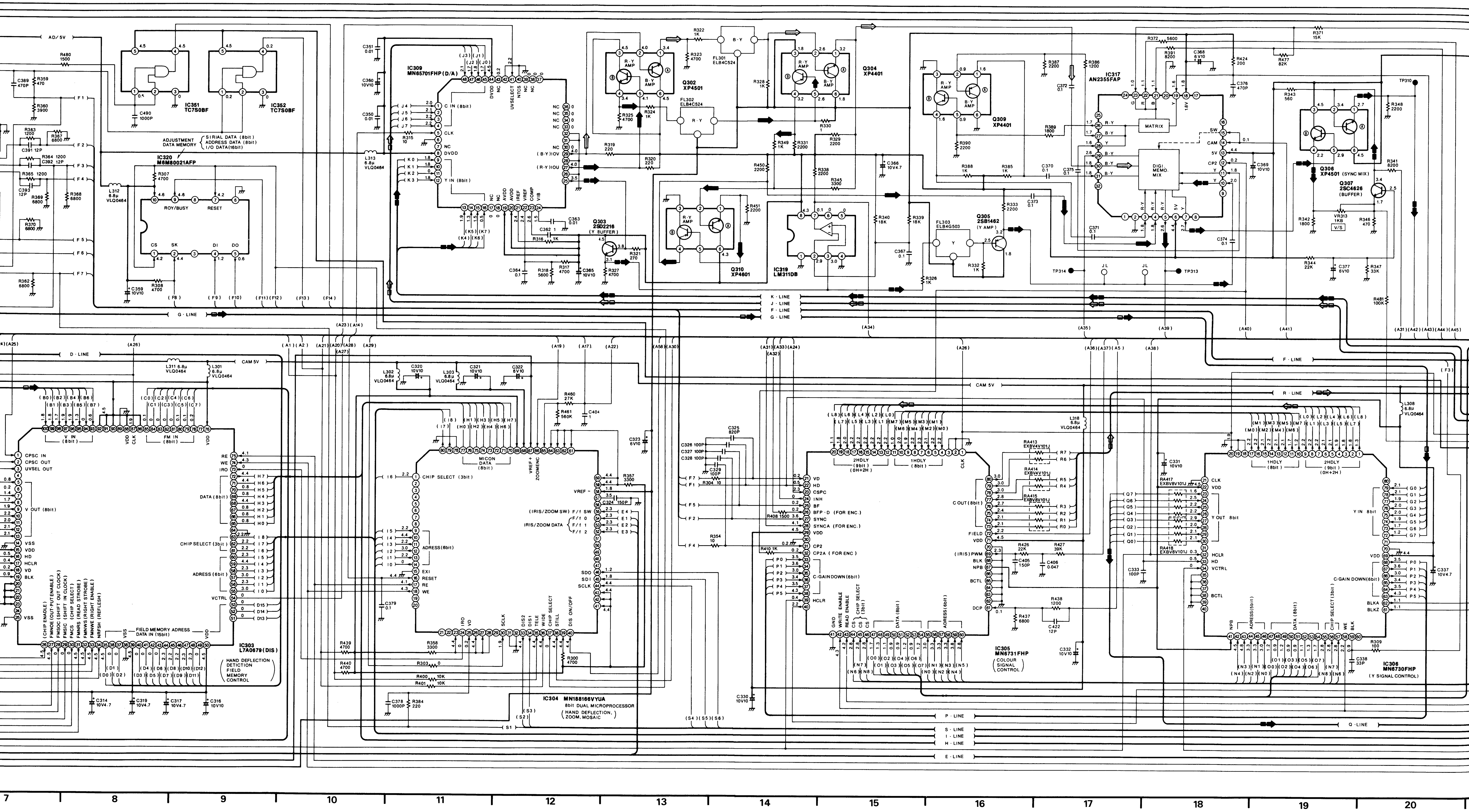
B301 (TO SENSOR)
B201-1 F/f 0
B201-2 F/f 1
B201-3 F/f 2
B201-4 TELE
B201-5 WIDE
B201-6 VREF 1.5V
B201-7 VMD 2
B201-8 VMD 1
B201-9 DCP
B201-10 HD
B201-11 GND
B201-12 MF N
B201-13 MF F
B201-14 CAM TEST
B201-15 SIO
B201-16 CAM CLOCK
B201-17 VMD 3
B201-18 FCK
B201-19 AD CLOCK
B201-20 HCLR
B201-21 GND (ANALOG)
B201-22 PRE VIDEO OUT
B201-23 VREF 3.5V
B201-24 OB CONT
B201-25 AGC CONT
B201-26 VD
B201-27 VREF 3.8V
B201-28 ZOOM ENC
B201-29 1.8V
B201-30 F/f SW
IC302 CXD1175AM (A/D)
D/A CONV.
IC315 MN73512XWAS
IC351 TC7S08F
IC352 TC7S08F
IC320 M6M80021AFP
ADJUSTMENT DATA MEMORY
SIRIAL DATA (8bit)
ADDRESS DATA (8bit)
I/O DATA (16bit)
IC309 MN65701FHP (D/A)
Q302 XP4501
Q303 2SD2216 (Y BUFFER)
R-Y AMP
B-Y AMP
IC307 MN4701S (FIELD MEMORY)
IC308 MN4701S (FIELD MEMORY)
IC303 L7A0679 (DIS)
HAND DEFLECTION DETECTION FIELD MEMORY CONTROL
V IN (8bit)
FM IN (8bit)
V OUT (8bit)
DATA (8bit)
CHIP SELECT (3bit)
ADRESS (6bit)
FIELD MEMORY ADRESS DATA IN (15bit)
IC304 MN188166VYUA
8bit DUAL MICROPROCESSOR
(HAND DEFLECTION, ZOOM, MOSAIC)
MICON DATA (8bit)
AD/5V
CAM 5V
G-LINE
D-LINE
C-LINE
B-LINE
E-LINE
TP302
TP304
TP301
TP303
TP305
TP329
TP328

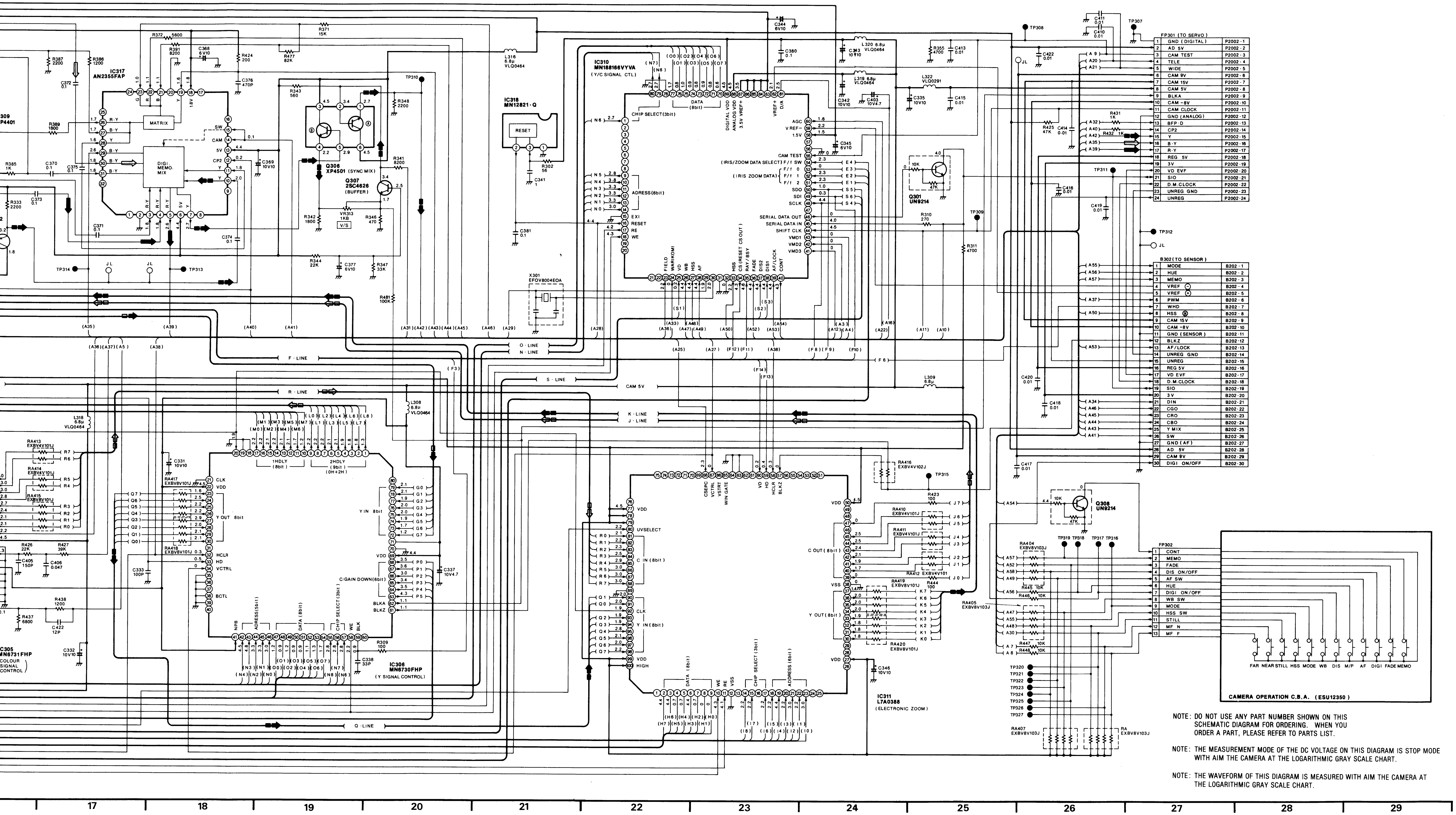
LUMINANCE SIGNAL

R-Y/B-Y COMPOSITE SIGNAL

R-Y SIGNAL

B-Y SIGNAL


IC351 TC7S08F
IC352 TC7S08F
IC320 M6M80021AFP
ADJUSTMENT DATA MEMORY
SIRIAL DATA (8bit)
ADDRESS DATA (8bit)
I/O DATA (16bit)
IC309 MN65701FHP (D/A)
C IN (8bit)
Y IN (8bit)
Q302 XP4501
Q304 XP4401
Q303 2SD2216 (Y BUFFER)
Q310 XP4601
IC319 LM311DB
Q305 2SB1462 (Y AMP)
Q309 XP4401
IC317 AN2355FAP
DIGI. MEMO. MIX
MATRIX
Q306 XP4501 (SYNC MIX)
Q307 2SC4626 (BUFFER)
FL301 ELB4C524
FL302 ELB4C524
FL303 ELB4G503
K - LINE
J - LINE
F - LINE
G - LINE
D - LINE
CAM 5V
R - LINE
IC303 L7A0679 (DIS)
HAND DEFLECTION DETECTION FIELD MEMORY CONTROL
V IN (8bit)
FM IN (8bit)
V OUT (8bit)
DATA (8bit)
CHIP SELECT (3bit)
ADRESS (6bit)
FIELD MEMORY ADRESS
DATA IN (15bit)
IC304 MN188166VYUA
8bit DUAL MICROPROCESSOR
(HAND DEFLECTION, ZOOM, MOSAIC)
MICON DATA (8bit)
IC305 MN6731FHP
COLOUR SIGNAL CONTROL
C OUT (8bit)
C:GAIN DOWN (6bit)
IC306 MN6730FHP
(Y SIGNAL CONTROL)
Y OUT 8bit
Y IN 8bit
P - LINE
Q - LINE
S - LINE
I - LINE
H - LINE
E - LINE
7
8
9
10
11
12
13
14
15
16
17
18
19
20


IC317
AN2355FAP
MATRIX
DIGI. MEMO. MIX
IC318
MN12821-Q
RESET
IC310
MN188166VYVA
(Y/C SIGNAL CTL)
Q306
XP4501 (SYNC MIX)
Q307
2SC4626
(BUFFER)
Q301
UN9214
Q308
UN9214
X301
EFOV8004E0A
IC305
MN6731FHP
(COLOUR SIGNAL CONTROL)
IC306
MN6730FHP
(Y SIGNAL CONTROL)
IC311
L7A0388
(ELECTRONIC ZOOM)
F - LINE
O - LINE
N - LINE
S - LINE
R - LINE
K - LINE
J - LINE
Q - LINE
CAM 5V
FP301 (TO SERVO)
1 GND (DIGITAL) P2002-1
2 AD 5V P2002-2
3 CAM TEST P2002-3
4 TELE P2002-4
5 WIDE P2002-5
6 CAM 9V P2002-6
7 CAM 15V P2002-7
8 CAM 5V P2002-8
9 BLKA P2002-9
10 CAM -8V P2002-10
11 CAM CLOCK P2002-11
12 GND (ANALOG) P2002-12
13 BFP·D P2002-13
14 CP2 P2002-14
15 Y P2002-15
16 B-Y P2002-16
17 R-Y P2002-17
18 REG 5V P2002-18
19 3V P2002-19
20 VD EVF P2002-20
21 SIO P2002-21
22 D.M.CLOCK P2002-22
23 UNREG GND P2002-23
24 UNREG P2002-24
B302 (TO SENSOR)
1 MODE B202-1
2 HUE B202-2
3 MEMO B202-3
4 VREF ⊖ B202-4
5 VREF ⊕ B202-5
6 PWM B202-6
7 WHD B202-7
8 HSS (B) B202-8
9 CAM 15V B202-9
10 CAM -8V B202-10
11 GND (SENSOR) B202-11
12 BLKZ B202-12
13 AF/LOCK B202-13
14 UNREG GND B202-14
15 UNREG B202-15
16 REG 5V B202-16
17 VD EVF B202-17
18 D.M.CLOCK B202-18
19 SIO B202-19
20 3V B202-20
21 DIN B202-21
22 CGO B202-22
23 CRO B202-23
24 CBO B202-24
25 Y MIX B202-25
26 SW B202-26
27 GND (AF) B202-27
28 AD 5V B202-28
29 CAM 9V B202-29
30 DIGI ON/OFF B202-30
FP302
1 CONT
2 MEMO
3 FADE
4 DIS ON/OFF
5 AF SW
6 HUE
7 DIGI ON/OFF
8 WB SW
9 MODE
10 HSS SW
11 STILL
12 MF N
13 MF F
FAR NEAR STILL HSS MODE WB DIS M/P AF DIGI FADE MEMO
CAMERA OPERATION C.B.A. (ESU12350)
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NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

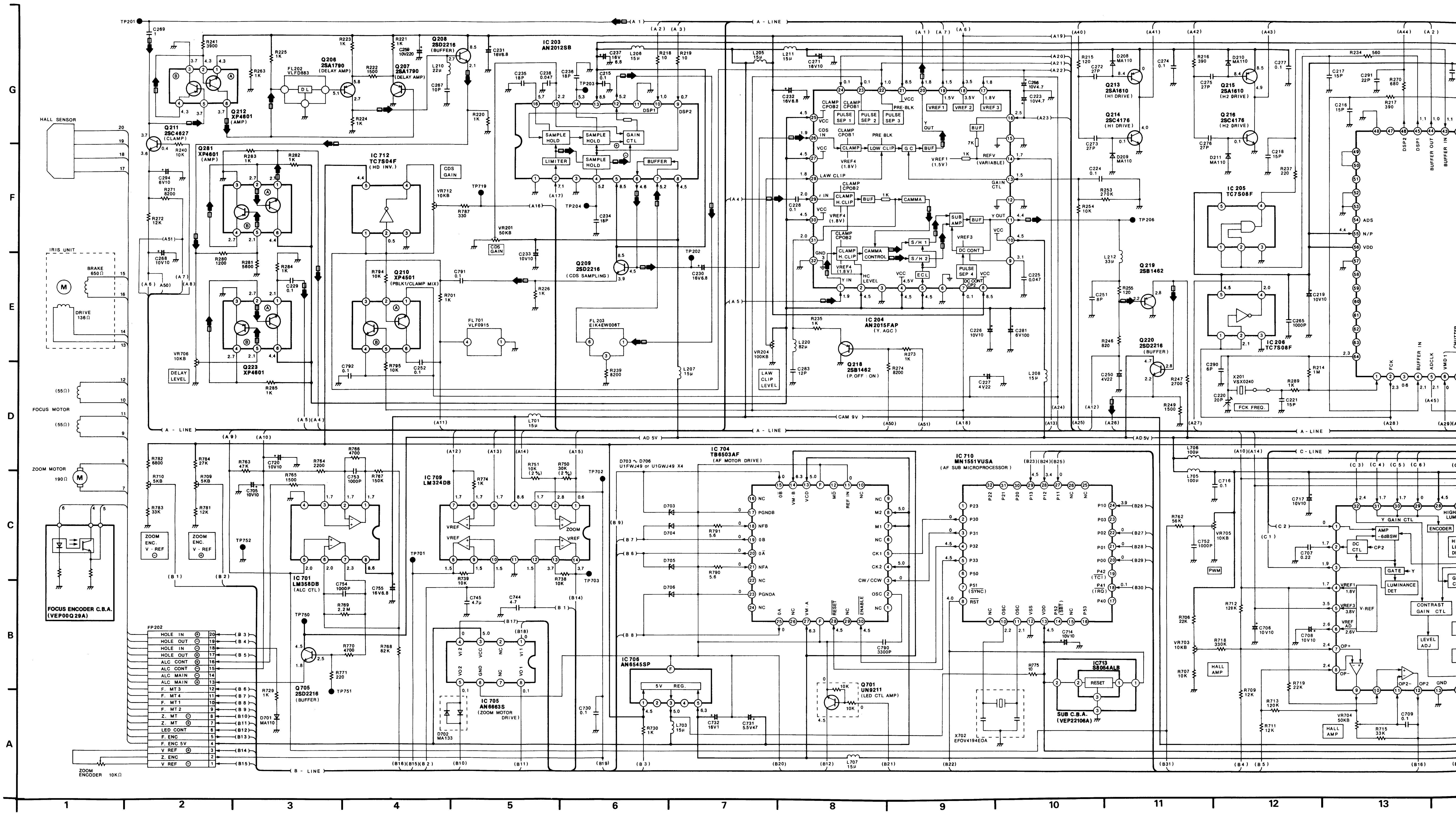
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

NOTE: THE WAVEFORM OF THIS DIAGRAM IS MEASURED WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

Next Page:
SENSOR Section

3-12. SENSOR (CCD DRIVE, AUTO FOCUS AND DIGITAL MEMORY Sections) SCHEMATIC DIAGRAM

PRE VIDEO SIGNAL


HALL SENSOR
IRIS UNIT
BRAKE 650Ω
DRIVE 136Ω
FOCUS MOTOR
ZOOM MOTOR 190Ω
FOCUS ENCODER C.B.A. (VEP00Q29A)
ZOOM ENCODER 10KΩ
Q211 2SC4627 (CLAMP)
Q212 XP4601 (AMP)
Q281 XP4601 (AMP)
Q223 XP4601
Q206 2SA1790 (DELAY AMP)
Q207 2SA1790 (DELAY AMP)
Q208 2SD2216 (BUFFER)
FL202 VLFD883
IC 712 TC7S04F (HD INV.)
CDS GAIN
Q210 XP4501 (PBLK1/CLAMP MIX)
FL 701 VLF0915
DELAY LEVEL
IC 203 AN2012SB
SAMPLE HOLD
GAIN CTL
LIMITER
BUFFER
DSP1
DSP2
Q209 2SD2216 (CDS SAMPLING)
FL 203 EIK4EW006T
IC 204 AN2015FAP (Y. AGC)
CLAMP CPOB2
CLAMP CPOB1
PULSE SEP 1
PULSE SEP 2
PULSE SEP 3
PRE BLK
VREF 1
VREF 2
VREF 3
LOW CLIP
GC
BUF
LAW CLIP
GAMMA
CAMMA CONTROL
S/H 1
S/H 2
SUB AMP
DC CONT
ECL
PULSE SEP 4
Y IN
Y OUT
HC LEVEL
LAW CLIP LEVEL
Q218 2SB1462 (P.OFF : ON)
Q213 2SA1610 (H1 DRIVE)
Q214 2SC4176 (H1 DRIVE)
Q215 2SA1610 (H2 DRIVE)
Q216 2SC4176 (H2 DRIVE)
IC 205 TC7S08F
IC 206 TC7S08F
Q219 2SB1462
Q220 2SD2216 (BUFFER)
X201 VSX0240
FCK FREQ.
A - LINE
B - LINE
C - LINE
CAM 9V
AD 5V
ZOOM ENC. V - REF
IC 701 LM358DB (ALC CTL)
IC 709 LM324DB
VREF
ZOOM
Q705 2SD2216 (BUFFER)
IC 705 AN6663S (ZOOM MOTOR DRIVE)
D701 MA110
D702 MA133
D703 ∼ D706 U1FWJ49 or U1GWJ49 X4
IC 704 TB6503AF (AF MOTOR DRIVE)
IC 706 AN6545SP
5V REG.
Q701 UN9211 (LED CTL AMP)
IC 710 MN1551VUSA (AF SUB MICROPROCESSOR)
X702 EFOV4194EOA
IC713 S8054ALB
RESET
SUB C.B.A. (VEP22106A)
PWM
HALL AMP
VR705 10KB
VR704 50KB
Y GAIN CTL
AMP −6dBSW
DC CTL
CP2
GATE
LUMINANCE DET
CONTRAST GAIN CTL
LEVEL ADJ
ENCODER
FP202
HOLE IN ⊕ 20
HOLE OUT ⊖ 19
HOLE IN ⊖ 18
HOLE OUT ⊕ 17
ALC CONT ⊕ 16
ALC CONT ⊖ 15
ALC MAIN ⊖ 14
ALC MAIN ⊕ 13
F. MT 3 12
F. MT 4 11
F. MT 1 10
F. MT 2 9
Z. MT ⊖ 8
Z. MT ⊕ 7
LED CONT 6
F. ENC 5
F. ENC 5V 4
V REF ⊕ 3
Z. ENC 2
V REF ⊖ 1
G
F
E
D
C
B
A
1
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3
4
5
6
7
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11
12
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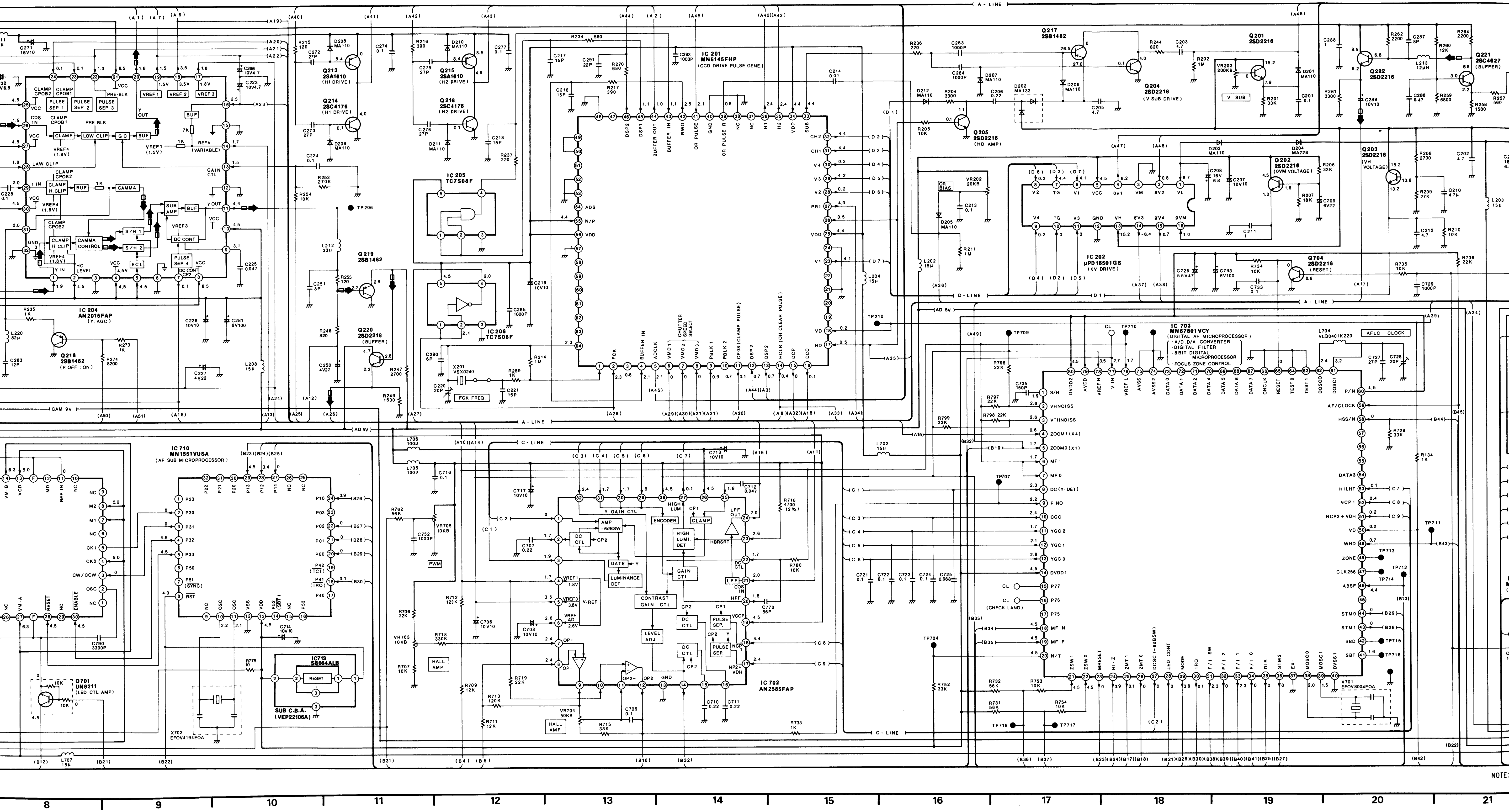
TIC DIAGRAM

PRE VIDEO SIGNAL


IC 204
AN2015FAP
(Y. AGC)
Q218
2SB1462
(P.OFF : ON)
Q213
2SA1610
(H1 DRIVE)
Q214
2SC4176
(H1 DRIVE)
Q215
2SA1610
(H2 DRIVE)
Q216
2SC4176
(H2 DRIVE)
IC 205
TC7S08F
IC 206
TC7S08F
Q219
2SB1462
Q220
2SD2216
(BUFFER)
X201
VSX0240
FCK FREQ.
TP206
IC 201
MN5145FHP
(CCD DRIVE PULSE GENE.)
Q217
2SB1462
Q201
2SD2216
Q204
2SD2216
(V SUB DRIVE)
V SUB
Q205
2SD2216
(HD AMP)
D202
MA133
Q202
2SD2216
(DVM VOLTAGE)
Q203
2SD2216
(VH VOLTAGE)
Q222
2SD2216
Q221
2SC4627
(BUFFER)
IC 202
μPD16501GS
(0V DRIVE)
Q704
2SD2216
(RESET)
OR BIAS
A - LINE
D - LINE
C - LINE
CAM 9V
AD 5V
IC 703
MN67801VCY
(DIGITAL AF MICROPROCESSOR)
·A/D, D/A CONVERTER
·DIGITAL FILTER
·8BIT DIGITAL MICROPROCESSOR
·FOCUS ZONE CONTROL
AFLC CLOCK
X701
EFOV8004EOA
IC 710
MN1551VUSA
(AF SUB MICROPROCESSOR)
IC713
S8064ALB
RESET
SUB C.B.A.
(VEP22106A)
X702
EFOV4194EOA
Q701
UN9211
(LED CTL AMP)
IC 702
AN2585FAP
PWM
HALL AMP
ENCODER
CLAMP
HIGH LUMI. DET
GAIN CTL
LUMINANCE DET
CONTRAST GAIN CTL
LEVEL ADJ
PULSE SEP.
V-REF
TP704
TP707
TP709
TP710
TP711
TP712
TP713
TP714
TP715
TP716
TP717
TP718
TP210
NOTE:

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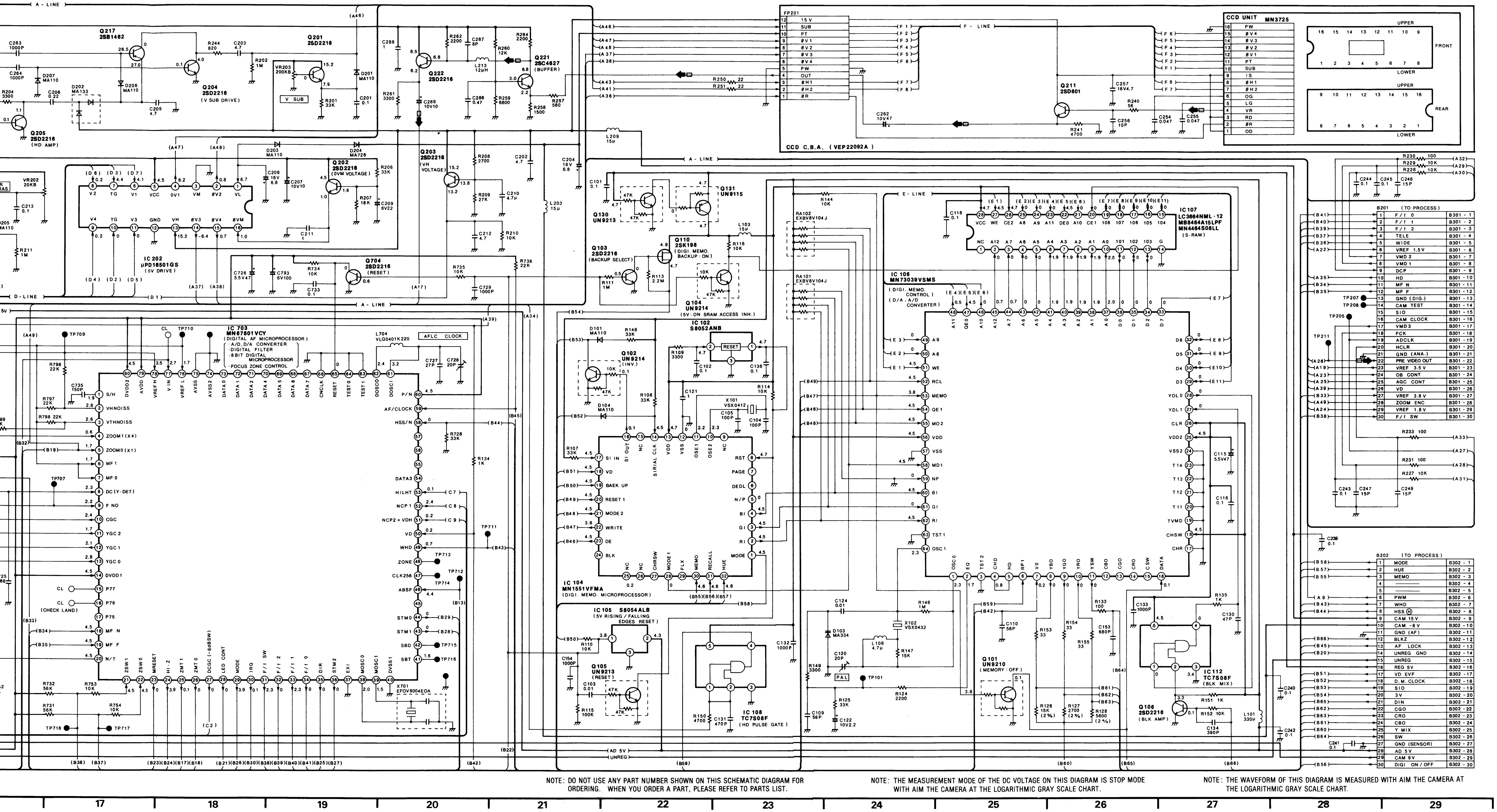

A - LINE
Q217 2SB1462
Q201 2SD2216
Q204 2SD2216 (V SUB DRIVE)
Q205 2SD2216 (HD AMP)
Q222 2SD2216
Q221 2SC4627 (BUFFER)
Q202 2SD2216 (OVM VOLTAGE)
Q203 2SD2216 (VH VOLTAGE)
IC 202 μPD16501GS (OV DRIVE)
Q704 2SD2216 (RESET)
D - LINE
IC 703 MN67801VCY (DIGITAL AF MICROPROCESSOR) · A/D, D/A CONVERTER · DIGITAL FILTER · 8 BIT DIGITAL MICROPROCESSOR · FOCUS ZONE CONTROL
AFLC CLOCK
X701 EFOV8004EOA
FP201
CCD C.B.A. (VEP22092A)
CCD UNIT MN3725
F - LINE
Q211 2SD601
UPPER
FRONT
LOWER
REAR
Q130 UN9213
Q131 UN9115
Q110 2SK198 (DIGI. MEMO. BACKUP : ON)
Q103 2SD2216 (BACKUP SELECT)
Q104 UN9214 (5V : ON SRAM ACCESS INH.)
IC 107 LC3664NML-12 MB8464A15LPF MN4464S08LL (S-RAM)
E - LINE
IC 106 MN73039VSMS (DIGI. MEMO. CONTROL) (D/A · A/D CONVERTER)
IC 102 S8052ANB
Q102 UN9214 (INV.)
IC 104 MN1551VFMA (DIGI. MEMO. MICROPROCESSOR)
IC 105 S8054ALB (5V RISING / FALLING EDGES RESET)
Q105 UN9213 (RESET)
IC 108 TC7S08F (HD PULSE GATE)
Q101 UN9210 (MEMORY : OFF)
IC112 TC7S08F (BLK MIX)
Q106 2SD2216 (BLK AMP)
B201 (TO PROCESS)
B202 (TO PROCESS)
AD 5V
UNREG

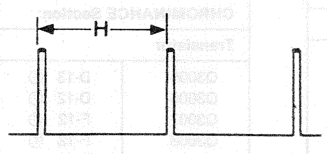
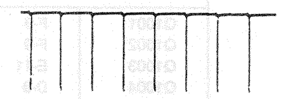
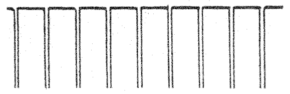
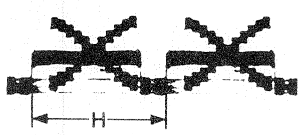
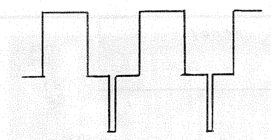
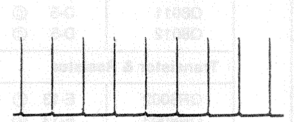
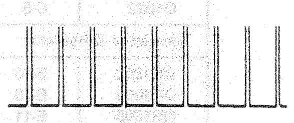
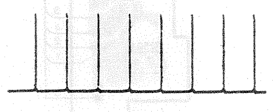
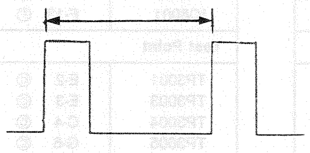
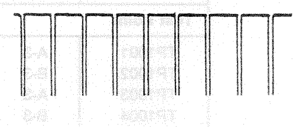
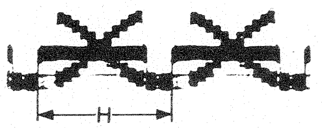
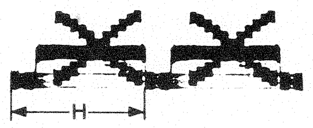
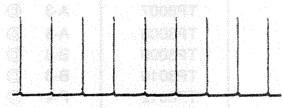
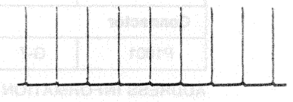
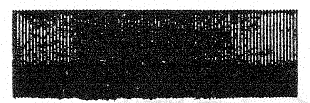
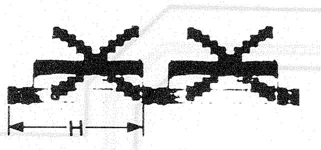
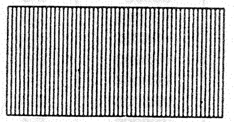
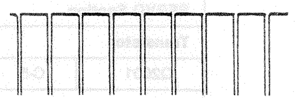
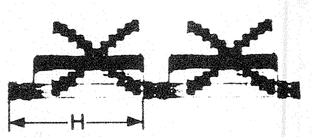
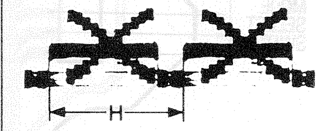
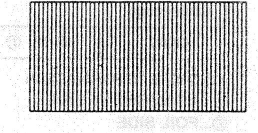
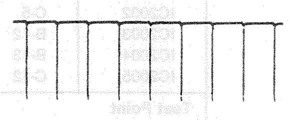
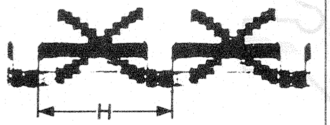
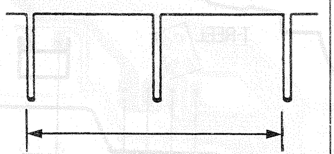
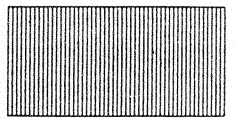
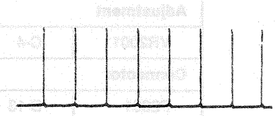
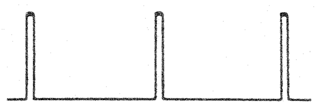
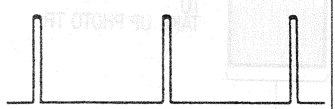
17 18 19 20 21 22 23 24 25 26 27 28 29

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

NOTE: THE WAVEFORM OF THIS DIAGRAM IS MEASURED WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

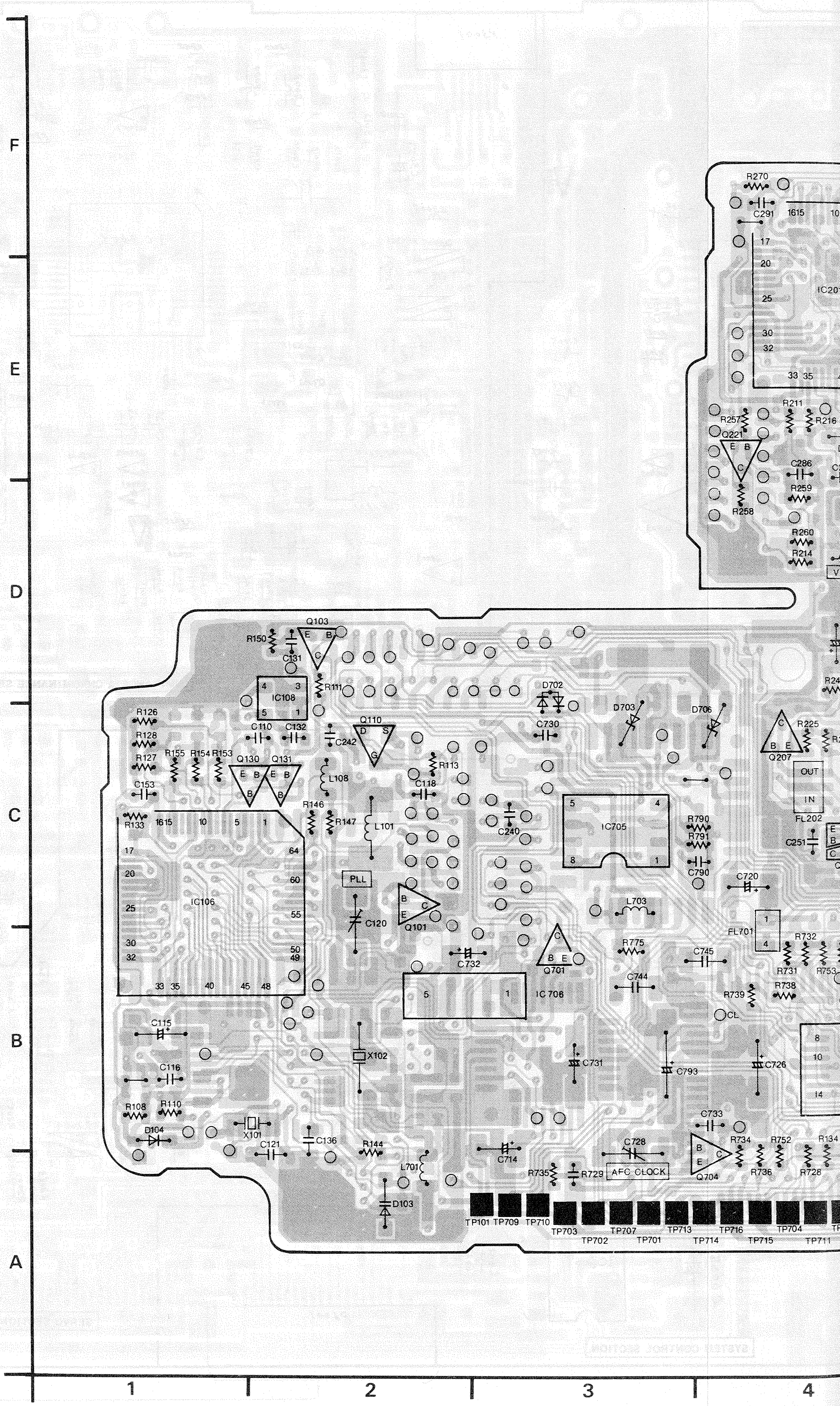
SENSOR CIRCUIT WAVEFORM (STOP MODE)

IC201-⑨, ⑩  4.4Vp-p	IC202-②  8.0Vp-p	IC202-⑮  7.8Vp-p	IC204-⑳  0.3Vp-p	IC703-(51)  4.0Vp-p
IC201-⑪  4.4Vp-p	IC202-④  7.0Vp-p	IC203-② 1.0Vp-p	IC204-㉓, ㉔  0.4Vp-p	
IC201-⑭  4.4Vp-p	IC202-⑥  4.3Vp-p	IC203-⑥  0.6Vp-p	IC204-㉖  0.5Vp-p	
IC201-⑮, ⑯  4.5Vp-p	IC202-⑧  4.5Vp-p	IC203-⑨, ⑩  6.0Vp-p	IC204-㉙  0.3Vp-p	
IC201-㉟, ㊱  7.0Vp-p	IC202-⑨  4.3Vp-p	IC204-①  0.3Vp-p	IC702-㉑  0.5Vp-p	
IC201-㊴  5.3Vp-p	IC202-⑪  4.5Vp-p	IC204-⑪  1.5Vp-p	IC703-㉘  4.0Vp-p	
IC201-㊶  3.9Vp-p	IC202-⑭  7.0Vp-p	IC204-㉒  0.4Vp-p	IC703-㊼, TP714  4.0Vp-p	

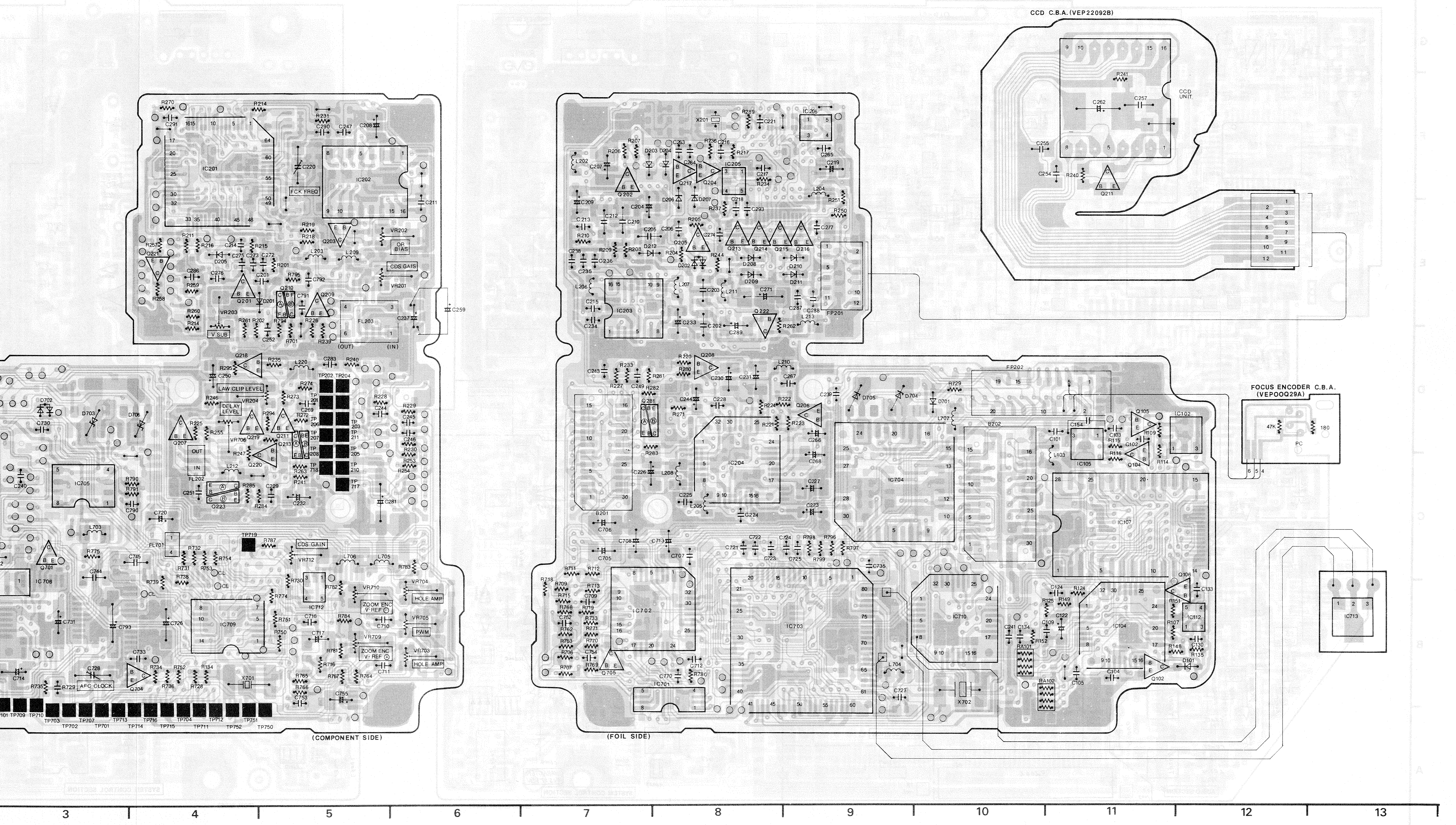
SENSOR C.B.A.		
Transistor		
Q101	C-2	Ⓒ
Q102	A-11	Ⓕ
Q103	D-2	Ⓒ
Q104	C-11	Ⓕ
Q105	C-11	Ⓕ
Q106	B-12	Ⓕ
Q110	C-2	Ⓒ
Q130	C-1	Ⓒ
Q131	C-2	Ⓒ
Q201	D-4	Ⓒ
Q202	E-7	Ⓕ
Q203	E-5	Ⓒ
Q204	E-8	Ⓕ
Q205	E-8	Ⓕ
Q206	D-9	Ⓕ
Q207	C-4	Ⓒ
Q208	D-8	Ⓕ
Q209	D-5	Ⓒ
Q210	D-5	Ⓒ
Q211	C-5	Ⓒ
Q211	E-11	Ⓕ
Q213	E-8	Ⓕ
Q214	E-8	Ⓕ
Q215	E-8	Ⓕ
Q216	E-9	Ⓕ
Q217	E-8	Ⓕ
Q218	D-4	Ⓒ
Q219	C-4	Ⓒ
Q220	C-5	Ⓒ
Q221	E-4	Ⓒ
Q222	D-8	Ⓕ
Q223	C-4	Ⓒ
Q281	D-7	Ⓕ
Q701	B-3	Ⓒ
Q704	A-4	Ⓒ
Q705	B-7	Ⓕ
Integrated Circuit		
IC102	C-12	Ⓕ
IC104	B-11	Ⓕ
IC105	C-11	Ⓕ
IC106	C-2	Ⓒ
IC107	C-11	Ⓕ
IC108	D-2	Ⓒ
IC112	B-12	Ⓕ
IC201	E-4	Ⓒ
IC202	E-5	Ⓒ
IC203	D-7	Ⓕ
IC204	C-8	Ⓕ
IC205	E-8	Ⓕ
IC206	E-9	Ⓕ
IC701	A-8	Ⓕ
IC702	B-8	Ⓕ
IC703	B-9	Ⓕ
IC704	C-9	Ⓕ
IC705	C-3	Ⓒ
IC706	B-3	Ⓒ
IC709	B-4	Ⓒ
IC710	B-10	Ⓕ
IC712	B-5	Ⓒ
IC713	B-13	Ⓕ
Test Point		
TP101	A-3	Ⓒ
TP201	D-5	Ⓒ
TP202	D-5	Ⓒ
TP203	C-5	Ⓒ
TP204	D-5	Ⓒ
TP205	C-5	Ⓒ
TP206	C-5	Ⓒ
TP207	C-5	Ⓒ
TP208	C-5	Ⓒ
TP210	C-5	Ⓒ
TP701	A-3	Ⓒ
TP702	A-3	Ⓒ
TP703	A-3	Ⓒ
TP704	A-4	Ⓒ
TP707	A-3	Ⓒ
TP709	A-3	Ⓒ
TP710	A-3	Ⓒ
TP712	A-4	Ⓒ
TP713	A-4	Ⓒ
TP714	A-4	Ⓒ
TP715	A-4	Ⓒ
TP716	A-4	Ⓒ
TP717	C-5	Ⓒ
TP718	C-5	Ⓒ
TP719	C-4	Ⓒ
TP750	A-5	Ⓒ
TP751	A-4	Ⓒ
TP752	A-4	Ⓒ
Adjustment		
C120	C-2	Ⓒ
C220	E-5	Ⓒ
C728	A-3	Ⓒ
VR201	D-6	Ⓒ
VR202	E-6	Ⓒ
VR203	D-4	Ⓒ
VR204	D-4	Ⓒ
VR703	B-6	Ⓒ
VR704	B-6	Ⓒ
VR705	B-6	Ⓒ
VR706	C-5	Ⓒ
VR709	B-5	Ⓒ
VR710	B-5	Ⓒ
VR712	B-5	Ⓒ
Connector		
B201	C-7	Ⓕ
B202	C-11	Ⓕ
FP201	D-9	Ⓕ
FP202	D-10	Ⓕ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

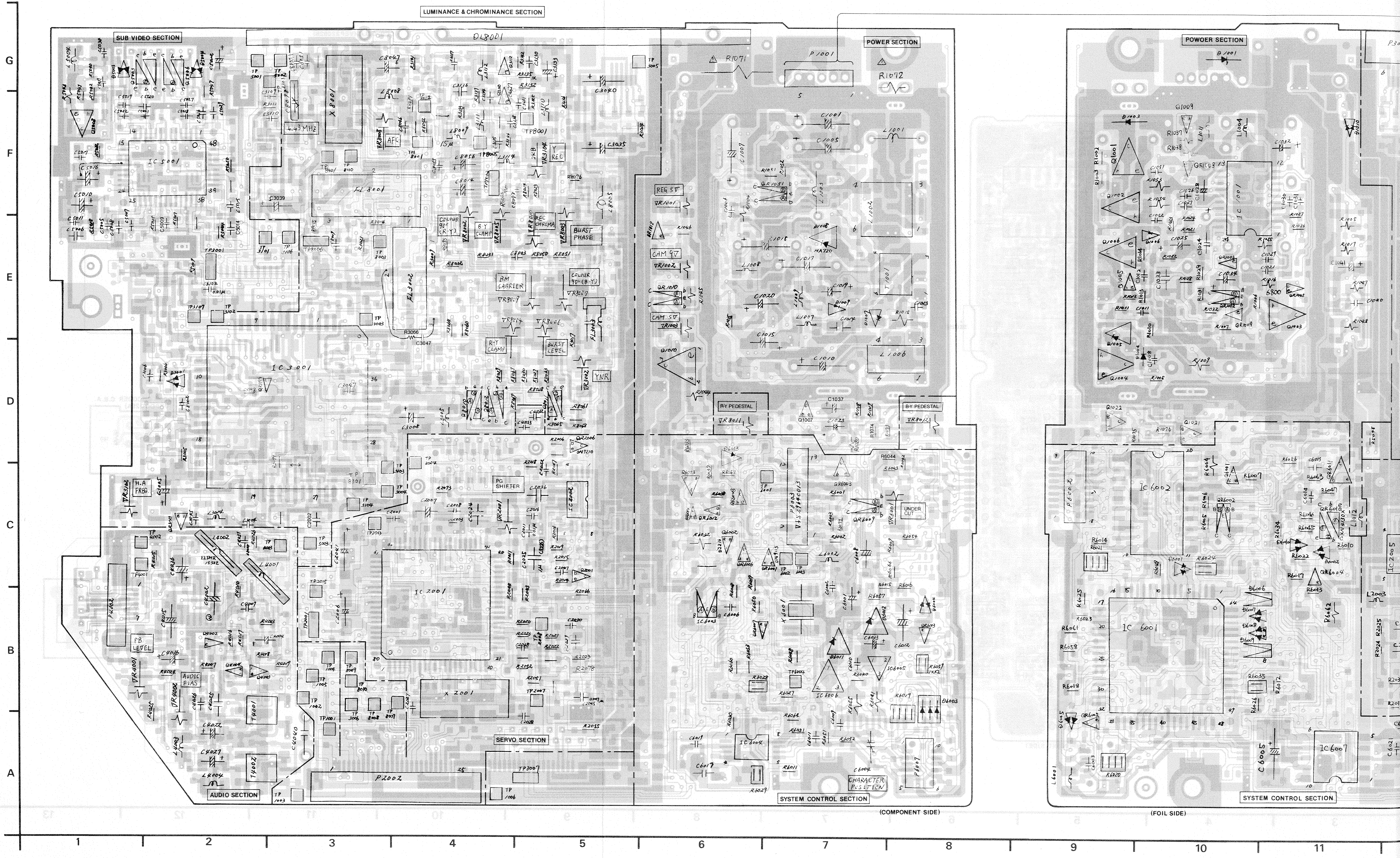
3-13. SENSOR (CCD DRIVE, AUTO FOCUS AND DIGITA


F
E
D
C
B
A
1
2
3
4
IC106
IC108
IC705
IC706
IC708
Q101
Q103
Q110
Q130
Q131
Q207
Q221
Q701
Q704
PLL
X101
X102
L101
L108
L701
L703
FL701
D103
D104
D702
D703
D706
C120
C728
AFC CLOCK
TP101
TP709
TP710
TP703
TP702
TP707
TP701
TP713
TP714
TP716
TP715
TP704
TP711

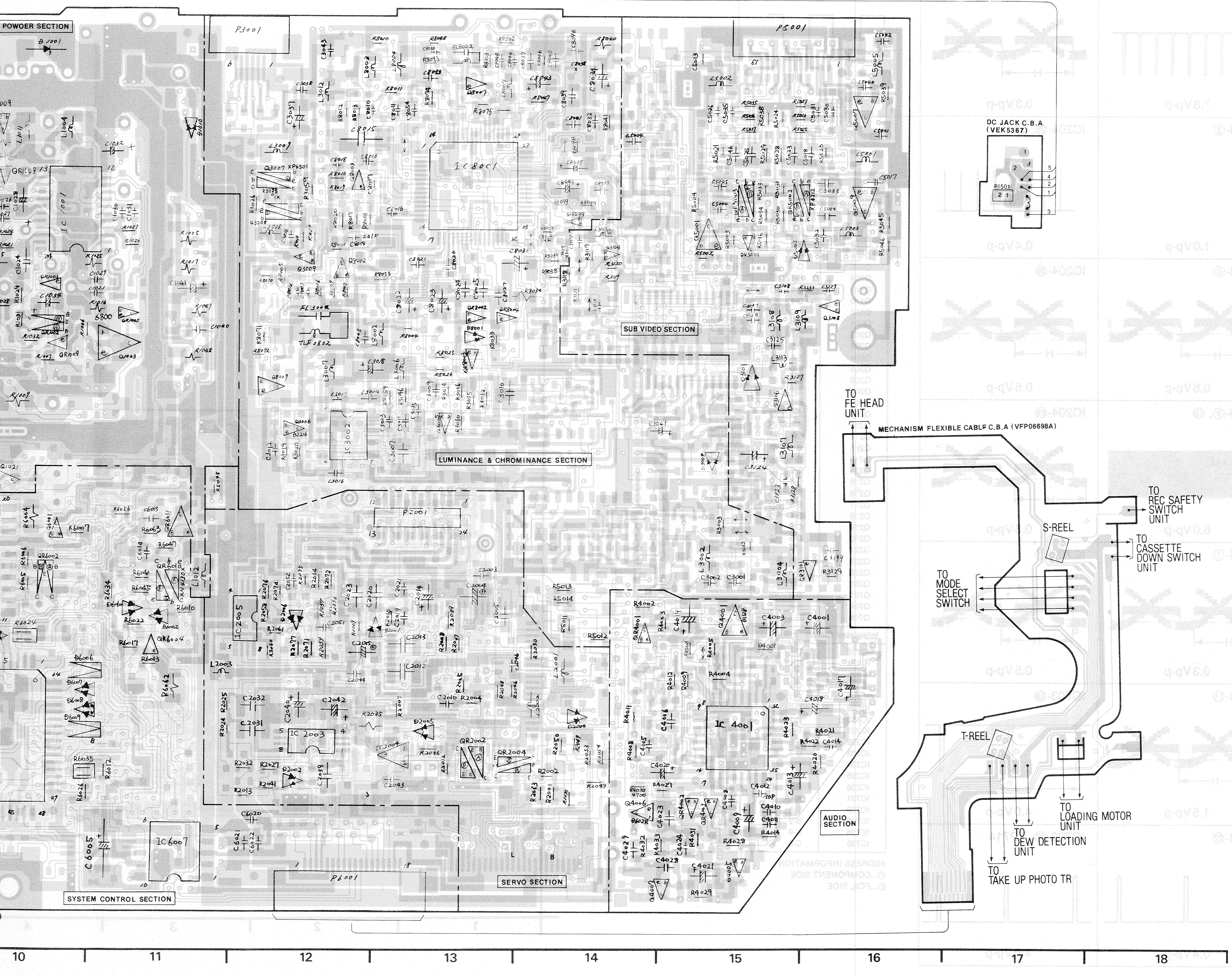
TO FOCUS AND DIGITAL MEMORY Sections) C.B.A. (VEP22101A)


CCD C.B.A. (VEP22092B)
CCD UNIT
FOCUS ENCODER C.B.A. (VEP00Q29A)
(COMPONENT SIDE)
(FOIL SIDE)
FCK FREQ
OR BIAS
CDS GAIS
V SUB
LAW CLIP LEVEL
DELAY LEVEL
CDS GAIN
ZOOM ENC V·REF
HOLE AMP
PWM
AFC CLOCK
IC201
IC202
IC203
IC204
IC205
IC206
IC701
IC702
IC703
IC704
IC705
IC706
IC709
IC710
IC712
IC713
IC102
IC104
IC105
IC107
IC112
FL202
FL203
FL701
FP201
FP202
X201
X701
X702
B201
B202
(OUT)
(IN)
3
4
5
6
7
8
9
10
11
12
13

3-14. MAIN (POWER, SERVO, SYSTEM CONTROL, LUMINANCE & CHROMINANCE, SUB VIDEO AND AUDIO Sections) C.B.A. (VEP06746A)


LUMINANCE & CHROMINANCE SECTION
SUB VIDEO SECTION
POWER SECTION
POWOR SECTION
SERVO SECTION
AUDIO SECTION
SYSTEM CONTROL SECTION
SYSTEM CONTROL SECTION
(COMPONENT SIDE)
(FOIL SIDE)
IC 5001
IC 3001
IC 2001
IC 6001
IC 6002
IC 1001
X 2001
X 8001
4.43 MHz
P2002
P1001
DL8001
FL8001
FL3002
REG 5V
CAM 9V
CAM 5V
R-Y PEDESTAL
B-Y PEDESTAL
BURST PHASE
BURST LEVEL
R-Y CLAMP
B-Y CLAMP
COLOUR 90° (R-Y)
COLOUR 90° (B-Y)
REC CHROMA
BM CARRIER
YNR
AFC
REC
H.A FREQ
PG SHIFTER
FB LEVEL
AUDIO BIAS
UNDER CUT
CHARACTER POSITION
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

Back Page:
SENSOR Section


POWOER SECTION
P3001
P5001
IC8001
IC1001
IC3002
IC2005
IC2003
IC4001
IC6007
P2001
P6001
SUB VIDEO SECTION
LUMINANCE & CHROMINANCE SECTION
SERVO SECTION
SYSTEM CONTROL SECTION
AUDIO SECTION
DC JACK C.B.A (VEK5367)
P1501
TO FE HEAD UNIT
MECHANISM FLEXIBLE CABLE C.B.A (VFP06698A)
TO REC SAFETY SWITCH UNIT
S-REEL
TO CASSETTE DOWN SWITCH UNIT
TO MODE SELECT SWITCH
T-REEL
TO LOADING MOTOR UNIT
TO DEW DETECTION UNIT
TO TAKE UP PHOTO TR
10
11
12
13
14
15
16
17
18

POWER Section		
Transistor		
Q1001	F-9	Ⓕ
Q1002	F-9	Ⓕ
Q1003	E-11	Ⓕ
Q1004	D-9	Ⓕ
Q1005	E-9	Ⓕ
Q1006	D-7	Ⓒ
Q1007	F-10	Ⓕ
Q1009	D-6	Ⓒ
Q1010	D-10	Ⓕ
Q1021	D-9	Ⓕ
Q1022	C-5	Ⓒ
Transistor & Resistor		
QR1002	E-10	Ⓕ
QR1003	E-10	Ⓕ
QR1005	E-11	Ⓕ
QR1008	F-10	Ⓕ
QR1009	E-10	Ⓕ
QR1010	E-6	Ⓒ
QR1012	E-6	Ⓒ
QR1051	F-7	Ⓒ
Integrated Circuit		
IC1001	F-10	Ⓕ
Test Point		
TP1001	A-3	Ⓒ
TP1002	B-3	Ⓒ
TP1003	A-3	Ⓒ
TP1004	B-3	Ⓒ
TP1005	B-3	Ⓒ
TP1006	A-4	Ⓒ
Adjustment		
VR1001	F-6	Ⓒ
VR1002	E-6	Ⓒ
VR1003	E-6	Ⓒ
Connector		
P1001	G-7	Ⓒ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

SERVO Section		
Transistor		
Q2001	C-5	Ⓒ
Transistor & Resistor		
QR2002	B-13	Ⓕ
QR2004	B-13	Ⓕ
QR2006	D-5	Ⓒ
Integrated Circuit		
IC2001	B-4	Ⓒ
IC2002	C-5	Ⓒ
IC2003	B-12	Ⓕ
IC2004	B-13	Ⓕ
IC2005	C-12	Ⓕ
Test Point		
TP2001	B-3	Ⓒ
TP2004	D-4	Ⓒ
TP2007	B-5	Ⓒ
TP2008	B-5	Ⓒ
TP2013	C-3	Ⓒ
TP2015	C-3	Ⓒ
Adjustment		
VR2001	C-4	Ⓒ
Connector		
P2001	D-13	Ⓕ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

LUMINANCE & CHROMINANCE Section		
Transistor		
Q3005	D-13	Ⓕ
Q3006	D-12	Ⓕ
Q3007	F-12	Ⓕ
Q3008	F-12	Ⓕ
Q3009	E-12	Ⓕ
Q8002	E-12	Ⓕ
Q8003	F-12	Ⓕ
Q8007	F-13	Ⓕ
Q8009	D-12	Ⓕ
Q8010	D-5	Ⓒ
Q8011	D-5	Ⓒ
Q8012	D-5	Ⓒ
Transistor & Resistor		
QR8002	E-13	Ⓕ
QR8003	E-13	Ⓕ
QR8004	E-13	Ⓕ
QR8099	F-14	Ⓕ
Integrated Circuit		
IC3001	D-3	Ⓒ
IC3002	D-12	Ⓕ
IC8001	F-13	Ⓕ
Test Point		
TP3001	E-2	Ⓒ
TP3003	E-3	Ⓒ
TP3004	C-4	Ⓒ
TP3005	G-6	Ⓒ
TP3006	A-3	Ⓒ
TP3007	A-5	Ⓒ
TP8001	F-5	Ⓒ
TP8002	F-4	Ⓒ
TP8003	E-3	Ⓒ
TP8005	F-4	Ⓒ
TP8006	E-3	Ⓒ
TP8007	A-3	Ⓒ
TP8008	A-3	Ⓒ
TP8009	B-3	Ⓒ
TP8010	B-3	Ⓒ
TP8012	F-4	Ⓒ
TP8110	F-3	Ⓒ
TP8301	C-3	Ⓒ
TP8301	C-3	Ⓒ
TP8401	F-3	Ⓒ
Adjustment		
C8098	F-3	Ⓒ
VR3002	D-5	Ⓒ
VR8002	E-4	Ⓒ
VR8003	E-5	Ⓒ
VR8004	E-4	Ⓒ
VR8005	E-4	Ⓒ
VR8006	E-4	Ⓒ
VR8007	E-5	Ⓒ
VR8008	F-3	Ⓒ
VR8009	E-4	Ⓒ
VR8010	E-5	Ⓒ
VR8011	D-6	Ⓒ
VR8012	D-8	Ⓒ
Connector		
P3001	G-12	Ⓕ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

SUB VIDEO Section		
Transistor		
Q3104	D-13	Ⓕ
Q3106	D-12	Ⓕ
Q3108	F-12	Ⓕ
Q3110	F-12	Ⓕ
Q3112	E-12	Ⓕ
Q5001	E-15	Ⓕ
Q5003	G-1	Ⓒ
Q5006	G-2	Ⓒ
Q5007	F-16	Ⓕ
Q5008	F-1	Ⓒ
Q5009	F-16	Ⓕ
Transistor & Resistor		
QR3101	C-15	Ⓕ
QR3103	C-2	Ⓒ
QR3199	D-3	Ⓒ
QR5001	E-15	Ⓕ
QR5002	F-15	Ⓕ
QR5003	F-15	Ⓕ
Integrated Circuit		
IC5001	F-2	Ⓒ
Test Point		
TP3101	E-2	Ⓒ
TP3102	E-2	Ⓒ
TP3103	C-4	Ⓒ
TP3104	C-3	Ⓒ
TP3106	E-3	Ⓒ
TP3107	E-2	Ⓒ
TP5001	G-2	Ⓒ
TP5002	G-3	Ⓒ
TP5003	C-3	Ⓒ
Adjustment		
VR3102	C-1	Ⓒ
VR3104	F-5	Ⓒ
Connector		
P5001	G-15	Ⓕ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

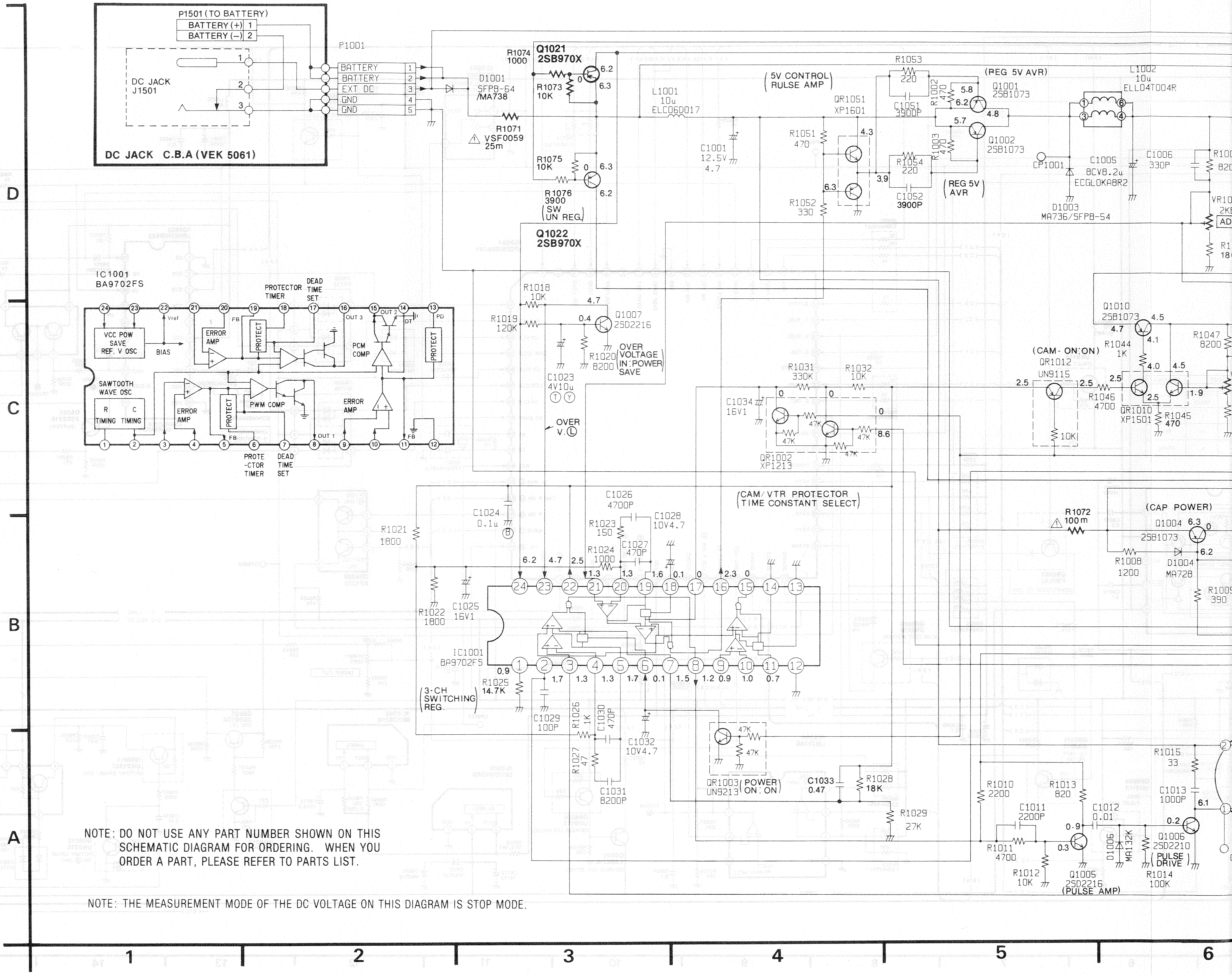
SYSTEM CONTROL Section		
Transistor		
Q6001	C-10	Ⓕ
Q6002	C-6	Ⓒ
Q6003	C-6	Ⓒ
Transistor		
QR6001	C-7	Ⓒ
QR6002	C-10	Ⓕ
QR6003	C-7	Ⓒ
QR6004	C-11	Ⓕ
QR6005	A-9	Ⓕ
QR6006	C-6	Ⓒ
QR6007	B-6	Ⓒ
QR6008	C-6	Ⓒ
QR6009	C-11	Ⓕ
QR6010	C-7	Ⓒ
QR6011	C-11	Ⓕ
QR6012	C-6	Ⓒ
QR6013	B-8	Ⓒ
QR6014	C-6	Ⓒ
Integrated Circuit		
IC6001	B-9	Ⓕ
IC6002	C-10	Ⓕ
IC6003	B-6	Ⓒ
IC6004	A-6	Ⓒ
IC6005	B-6	Ⓒ
IC6006	B-8	Ⓒ
IC6007	A-11	Ⓕ
Test Point		
TP6001	C-7	Ⓒ
TP6002	C-7	Ⓒ
TP6003	C-7	Ⓒ
TP6004	B-7	Ⓒ
Adjustment		
C6004	A-7	Ⓒ
VR6001	C-8	Ⓒ
Connector		
P6001	A-12	Ⓕ
P6002	C-9	Ⓕ
P6003	C-7	Ⓒ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

AUDIO Section		
Transistor		
Q4001	C-15	Ⓕ
Q4002	B-2	Ⓒ
Q4003	B-2	Ⓒ
Q4004	B-2	Ⓒ
Q4005	A-15	Ⓕ
Q4006	A-14	Ⓕ
Q4007	A-14	Ⓕ
Transistor & Resistor		
QR4001	C-14	Ⓕ
QR4002	A-15	Ⓕ
QR4003	A-15	Ⓕ
Integrated Circuit		
IC4001	B-15	Ⓕ
Test Point		
TP4001	C-1	Ⓒ
TP4002	C-1	Ⓒ
TP4003	C-3	Ⓒ
Adjustment		
VR4001	B-1	Ⓒ
VR4002	B-2	Ⓒ

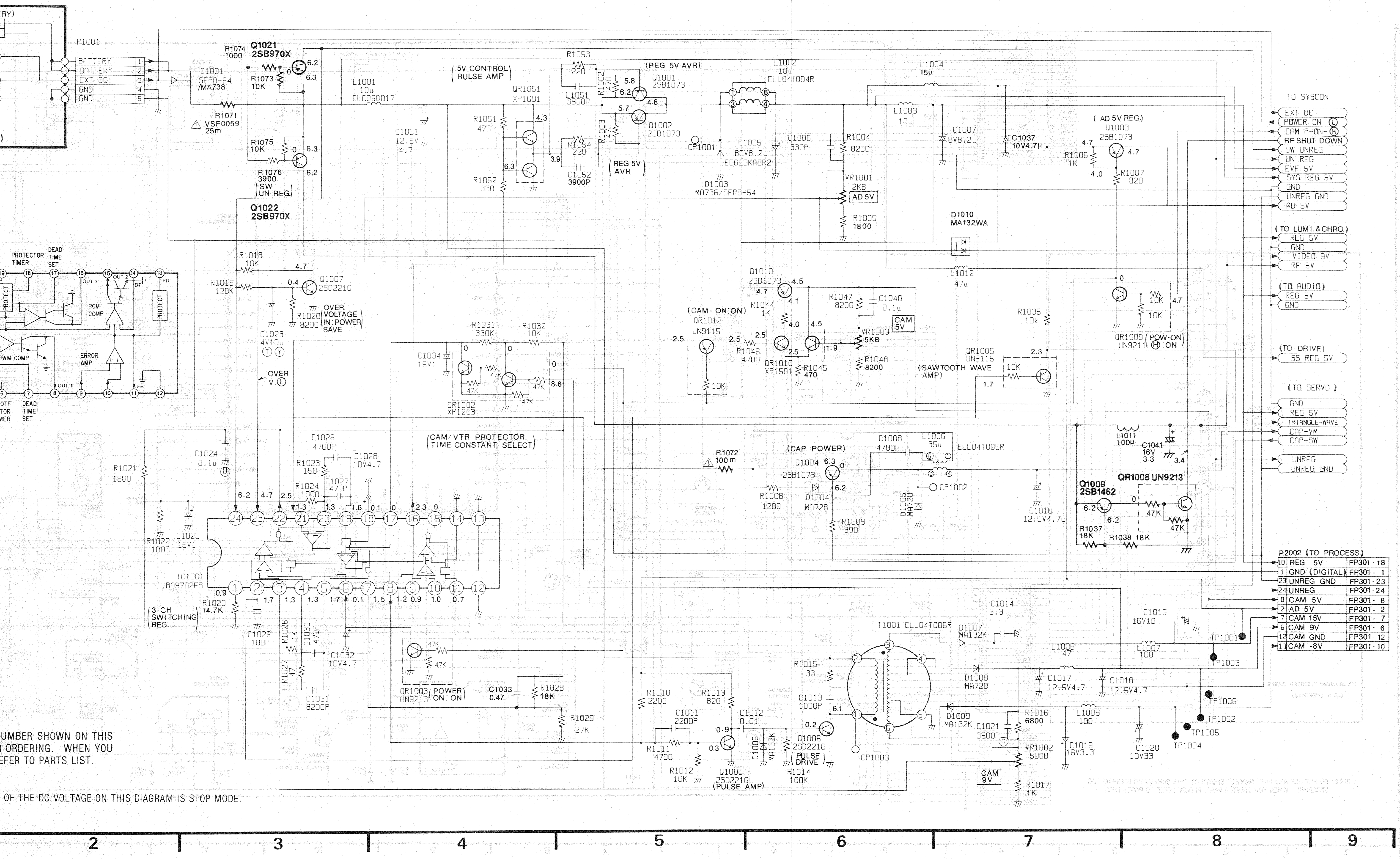
ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

3-15. POWER SCHEMATIC DIAGRAM


P1501 (TO BATTERY)
BATTERY (+) 1
BATTERY (−) 2
DC JACK J1501
DC JACK C.B.A (VEK 5061)
P1001
BATTERY
BATTERY
EXT DC
GND
GND
D1001 SFPB-64 /MA738
R1071 VSF0059 25m
R1074 1000
Q1021 2SB970X
R1073 10K
R1075 10K
R1076 3900
SW UN REG
Q1022 2SB970X
L1001 10u ELC06D017
C1001 12.5V 4.7
5V CONTROL RULSE AMP
QR1051 XP1601
R1051 470
R1052 330
R1053 220
C1051 3900P
R1054 220
C1052 3900P
R1002 470
R1003 470
REG 5V AVR
Q1001 2SB1073
Q1002 2SB1073
L1002 10u ELL04T004R
CP1001
C1005 BCV8.2u ECGL0KABR2
C1006 330P
D1003 MA736/SFPB-54
IC1001 BA9702FS
PROTECTOR TIMER
DEAD TIME SET
VCC POW SAVE REF. V OSC
Vref
BIAS
ERROR AMP
PROTECT
OUT 3
OUT 2
PCM COMP
PD
SAWTOOTH WAVE OSC
R TIMING
C TIMING
PWM COMP
OUT 1
FB
PROTE -CTOR TIMER
DEAD TIME SET
R1018 10K
R1019 120K
Q1007 2SD2216
R1020 8200
OVER VOLTAGE (IN: POWER SAVE)
C1023 4V10u
OVER V.
R1031 330K
R1032 10K
C1034 16V1
QR1002 XP1213
Q1010 2SB1073
R1044 1K
R1047 8200
CAM·ON:ON
QR1012 UN9115
R1046 4700
QR1010 XP1501
R1045 470
CAM/VTR PROTECTOR TIME CONSTANT SELECT
C1026 4700P
C1028 10V4.7
R1023 150
C1027 470P
R1024 1000
C1024 0.1u
R1021 1800
R1022 1800
C1025 16V1
IC1001 BA9702FS
R1025 14.7K
3-CH SWITCHING REG.
C1029 100P
R1026 1K
C1030 470P
R1027 47
C1031 8200P
C1032 10V4.7
QR1003 UN9213 POWER ON: ON
C1033 0.47
R1028 18K
R1029 27K
R1072 100m
CAP POWER
Q1004 2SB1073
R1008 1200
D1004 MA728
R1009 390
R1010 2200
R1011 4700
C1011 2200P
R1012 10K
R1013 820
C1012 0.01
Q1005 2SD2216 PULSE AMP
D1006 MA132K
Q1006 2SD2210 PULSE DRIVE
R1014 100K
R1015 33
C1013 1000P
A
B
C
D
1
2
3
4
5
6

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

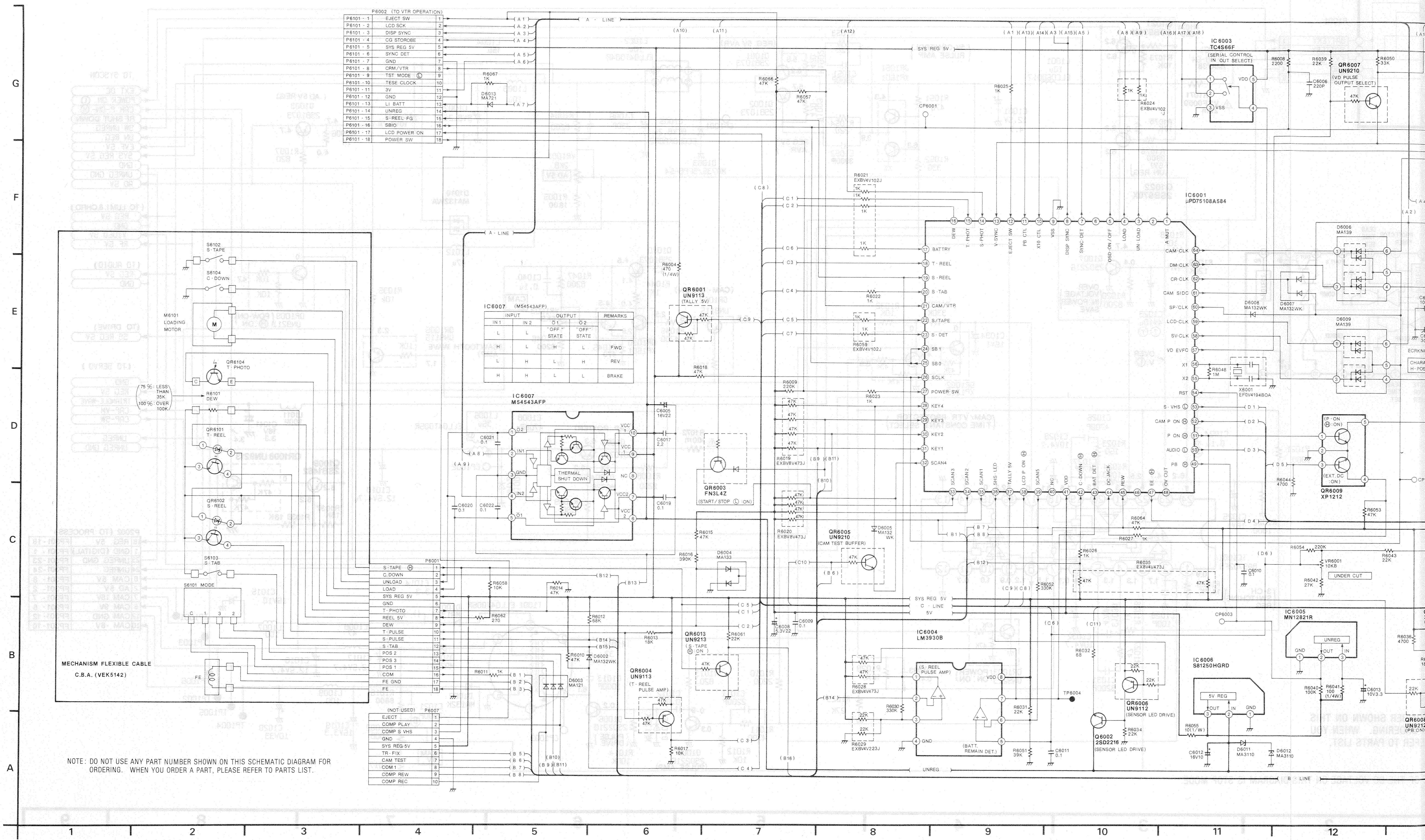

P1001
BATTERY
BATTERY
EXT DC
GND
GND
R1074 1000
Q1021 2SB970X
R1073 10K
D1001 SFPB-64 /MA738
R1071 VSF0059 25m
R1075 10K
R1076 3900
(SW UN REG)
Q1022 2SB970X
L1001 10u ELC06D017
C1001 12.5V 4.7
(5V CONTROL RULSE AMP)
QR1051 XP1601
R1051 470
R1052 330
R1053 220
C1051 3900P
R1054 220
C1052 3900P
R1002 470
R1003 470
(REG 5V AVR)
Q1001 2SB1073
Q1002 2SB1073
(REG 5V AVR)
L1002 10u ELL04T004R
CP1001
C1005 8CV8.2u ECGL0KA8R2
D1003 MA736/SFPB-54
C1006 330P
R1004 8200
VR1001 2KB
AD 5V
R1005 1800
L1004 15µ
L1003 10u
C1007 8V8.2u
C1037 10V4.7µ
(AD 5V REG.)
Q1003 2SB1073
R1006 1K
R1007 820
D1010 MA132WA
L1012 47u
TO SYSCON
EXT DC
POWER ON Ⓛ
CAM P-ON-Ⓗ
RF SHUT DOWN
SW UNREG
UN REG
EVF 5V
SYS REG 5V
GND
UNREG GND
AD 5V
(TO LUMI.&CHRO.)
REG 5V
GND
VIDEO 9V
RF 5V
(TO AUDIO)
REG 5V
GND
(TO DRIVE)
SS REG 5V
(TO SERVO)
GND
REG 5V
TRIANGLE-WAVE
CAP-VM
CAP-SW
UNREG
UNREG GND
PROTECTOR TIMER
DEAD TIME SET
PROTECT
PCM COMP
PWM COMP
ERROR AMP
OUT 1
OUT 2
OUT 3
DT
PD
FB
OTE TOR MER
DEAD TIME SET
R1018 10K
R1019 120K
Q1007 2SD2216
C1023 4V10u
R1020 8200
(OVER VOLTAGE IN POWER SAVE)
OVER V.Ⓛ
R1031 330K
R1032 10K
C1034 16V1
QR1002 XP1213
Q1010 2SB1073
(CAM-ON:ON) QR1012 UN9115
R1044 1K
R1046 4700
QR1010 XP1501
R1045 470
R1047 8200
C1040 0.1u
CAM 5V
VR1003 5KB
R1048 8200
QR1005 UN9115
(SAWTOOTH WAVE AMP)
R1035 10k
QR1009 (POW-ON) UN9211 Ⓗ:ON
R1021 1800
C1024 0.1u
R1022 1800
C1025 16V1
(CAM/VTR PROTECTOR TIME CONSTANT SELECT)
C1026 4700P
R1023 150
C1028 10V4.7
C1027 470P
R1024 1000
IC1001 BA9702FS
(3-CH SWITCHING REG.)
R1025 14.7K
C1029 100P
R1026 1K
C1030 470P
R1027 47
C1031 8200P
C1032 10V4.7
QR1003 (POWER ON:ON) UN9213
C1033 0.47
R1028 18K
R1029 27K
R1072 100m
(CAP POWER)
Q1004 2SB1073
R1008 1200
D1004 MA728
R1009 390
D1005 MA720
C1008 4700P
L1006 35u ELL04T005R
CP1002
C1010 12.5V4.7u
L1011 100µ
C1041 16V 3.3
Q1009 2SB1462
QR1008 UN9213
R1037 18K
R1038 18K
P2002 (TO PROCESS)
18 REG 5V FP301-18
1 GND (DIGITAL) FP301-1
23 UNREG GND FP301-23
24 UNREG FP301-24
8 CAM 5V FP301-8
2 AD 5V FP301-2
7 CAM 15V FP301-7
6 CAM 9V FP301-6
12 CAM GND FP301-12
10 CAM -8V FP301-10
T1001 ELL04T006R
D1007 MA132K
C1014 3.3
C1015 16V10
TP1001
TP1003
L1008 47
L1007 100
R1010 2200
C1011 2200P
R1011 4700
R1012 10K
R1013 820
C1012 0.01
Q1005 2SD2216 (PULSE AMP)
D1006 MA132K
Q1006 2SD2210 (PULSE DRIVE)
R1014 100K
R1015 33
C1013 1000P
CP1003
D1008 MA720
D1009 MA132K
C1017 12.5V4.7
C1018 12.5V4.7
TP1006
R1016 6800
C1021 3900P
VR1002 500B
CAM 9V
R1017 1K
L1009 100
C1019 16V3.3
C1020 10V33
TP1002
TP1005
TP1004
2
3
4
5
6
7
8
9

UMBER SHOWN ON THIS
R ORDERING. WHEN YOU
EFER TO PARTS LIST.

OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

Next Page:
SYSTEM CONTROL Section

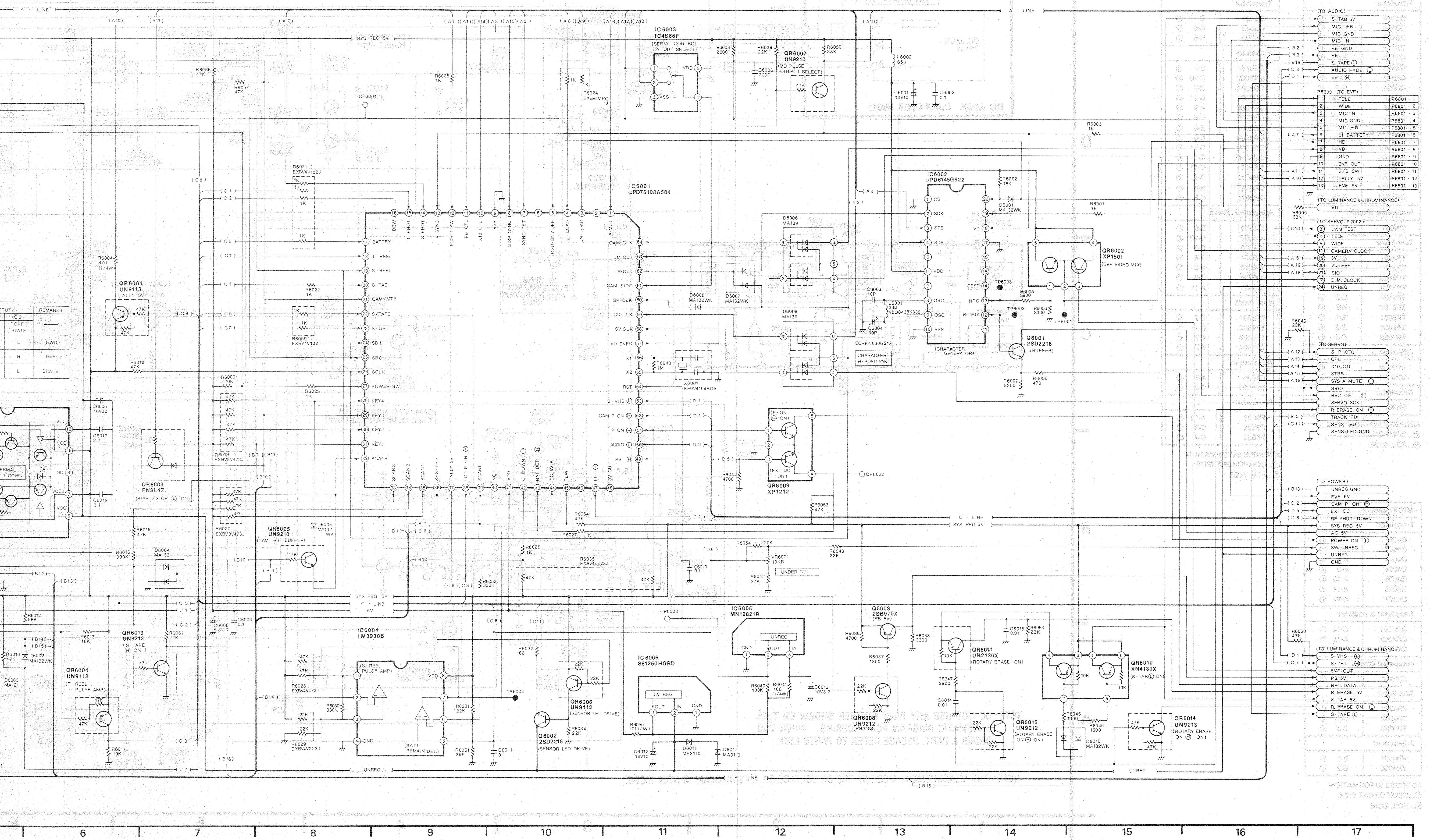
3-16. SYSTEM CONTROL SCHEMATIC DIAGRAM


P6002 (TO VTR OPERATION)
P6101 - 1 EJECT SW 1
P6101 - 2 LCD SCK 2
P6101 - 3 DISP SYNC 3
P6101 - 4 CG STOROBE 4
P6101 - 5 SYS REG 5V 5
P6101 - 6 SYNC DET 6
P6101 - 7 GND 7
P6101 - 8 CRM/VTR 8
P6101 - 9 TST MODE Ⓛ 9
P6101 - 10 TESE CLOCK 10
P6101 - 11 3V 11
P6101 - 12 GND 12
P6101 - 13 LI BATT 13
P6101 - 14 UNREG 14
P6101 - 15 S-REEL FG 15
P6101 - 16 SBIO 16
P6101 - 17 LCD POWER ON 17
P6101 - 18 POWER SW 18
A - LINE
B - LINE
SYS REG 5V
C - LINE
5V
UNREG
IC6001
μPD75108A584
IC6003
TC4S66F
(SERIAL CONTROL IN OUT SELECT)
QR6007
UN9210
(VD PULSE OUTPUT SELECT)
IC6007
M54543AFP
THERMAL SHUT DOWN
QR6001
UN9113
(TALLY 5V)
QR6003
FN3L4Z
(START/STOP Ⓛ :ON)
QR6005
UN9210
(CAM TEST BUFFER)
QR6013
UN9213
(S-TAPE Ⓗ :ON)
QR6004
UN9113
(T-REEL PULSE AMP)
IC6004
LM3930B
(S-REEL PULSE AMP)
(BATT. REMAIN DET.)
Q6002
2SD2216
(SENSOR LED DRIVE)
QR6006
UN9112
(SENSOR LED DRIVE)
IC6006
S81250HGRD
5V REG
IC6005
MN12821R
UNREG
QR6009
XP1212
(P-ON Ⓗ:ON)
(EXT.DC :ON)
D6006 MA139
D6009 MA139
D6007 MA132WK
D6008 MA132WK
X6001 EF0V4194BOA
VR6001 10KB
UNDER CUT
CP6001
CP6003
TP6004
S6102 S-TAPE
S6104 C-DOWN
M6101 LOADING MOTOR
QR6104 T-PHOTO
R6101 DEW
75%: LESS THAN 35K
100%: OVER 100K
QR6101 T-REEL
QR6102 S-REEL
S6103 S-TAB
S6101 MODE
FE
MECHANISM FLEXIBLE CABLE
C.B.A. (VEK5142)
P6001
S-TAPE Ⓗ 1
C-DOWN 2
UNLOAD 3
LOAD 4
SYS REG 5V 5
GND 6
T-PHOTO 7
REEL 5V 8
DEW 9
T-PULSE 10
S-PULSE 11
S-TAB 12
POS 2 13
POS 3 14
POS 1 15
COM 16
FE GND 17
FE 18
(NOT USED) P6007
EJECT 1
COMP PLAY 2
COMP S VHS 3
GND 4
SYS REG 5V 5
TR-FIX 6
CAM TEST 7
COM 1 8
COMP REW 9
COMP REC 10
BATTRY
T-REEL
S-REEL
S-TAB
CAM/VTR
S/TAPE
S-DET
SB1
SB0
SCLK
POWER-SW
KEY4
KEY3
KEY2
KEY1
SCAN4
SCAN3
SCAN2
SCAN1
SHS LED
TALLY 5V
LCD P ON Ⓗ
SCAN5
NC
VDD
C-DOWN Ⓗ
BAT DET Ⓗ
DC JACK
REW
EE Ⓗ
OV CUT
DEW
T-PHOT
S-PHOT
V-SYNC
EJECT SW
PB CTL
X10 CTL
VSS
DISP SYNC
SYNC DET
OSD-ON/OFF
LOAD
UN-LOAD
A-MUT
CAM-CLK
DM-CLK
CR-CLK
CAM SIDC
SP-CLK
LCD-CLK
SV-CLK
VD EVFC
X1
X2
RST
S-VHS Ⓛ
CAM P ON Ⓗ
P ON Ⓗ
AUDIO Ⓛ
PB Ⓗ
A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
10
11
12

IC6007 (M54543AFP)

INPUT		OUTPUT		REMARKS
IN 1	IN 2	$\overline{O}$1	$\overline{O}$2	
L	L	"OFF" STATE	"OFF" STATE	——
H	L	H	L	FWD
L	H	L	H	REV
H	H	L	L	BRAKE

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.


A - LINE
SYS REG 5V
IC6001
μPD75108A584
IC6002
μPD6145G622
(CHARACTER GENERATOR)
IC6003
TC4S66F
(SERIAL CONTROL IN OUT SELECT)
IC6004
LM3930B
(S-REEL PULSE AMP)
(BATT. REMAIN DET.)
IC6005
MN12821R
IC6006
S81250HGRD
5V REG
QR6001
UN9113
(TALLY 5V)
QR6003
FN3L4Z
(START/STOP Ⓛ:ON)
QR6004
UN9113
(T-REEL PULSE AMP)
QR6005
UN9210
(CAM TEST BUFFER)
QR6006
UN9112
(SENSOR LED DRIVE)
Q6002
2SD2216
(SENSOR LED DRIVE)
QR6007
UN9210
(VD PULSE OUTPUT SELECT)
QR6002
XP1501
(EVF VIDEO MIX)
Q6001
2SD2216
(BUFFER)
QR6009
XP1212
(P·ON Ⓗ:ON)
(EXT. DC Ⓛ:ON)
Q6003
2SB970X
(PB 5V)
QR6008
UN9212
(PB:ON)
QR6011
UN2130X
(ROTARY ERASE:ON)
QR6012
UN9212
(ROTARY ERASE ON Ⓗ:ON)
QR6010
XN4130X
(S-TAB Ⓛ:ON)
QR6014
UN9213
(ROTARY ERASE ON Ⓗ:ON)
QR6013
UN9213
(S-TAPE Ⓗ:ON)
X6001
EF0V4194BOA
L6001
33μ
VLQ0438K330
L6002
65μ
ECRKN030G21X
CHARACTER H-POSITION
UNDER CUT
VR6001
10KB
D - LINE
C - LINE
B - LINE
UNREG
(TO AUDIO)
S-TAB 5V
MIC +B
MIC GND
MIC IN
FE GND
FE
S-TAPE Ⓛ
AUDIO FADE Ⓛ
EE Ⓗ
P6003 (TO EVF)
TELE
WIDE
MIC IN
MIC GND
MIC +B
LI BATTERY
HD
VD
GND
EVF OUT
S/S SW
TELLY 5V
EVF 5V
(TO LUMINANCE & CHROMINANCE)
VD
(TO SERVO P2002)
CAM TEST
TELE
WIDE
CAMERA CLOCK
3V
VD EVF
SIO
D.M CLOCK
UNREG
(TO SERVO)
S-PHOTO
CTL
X10 CTL
STRB
SYS A MUTE Ⓗ
SBIO
REC OFF Ⓛ
SERVO SCK
R.ERASE ON Ⓗ
TRACK·FIX
SENS LED
SENS LED GND
(TO POWER)
UNREG GND
EVF 5V
CAM P·ON Ⓗ
EXT DC
RF SHUT·DOWN
SYS REG 5V
AD 5V
POWER ON Ⓛ
SW UNREG
UNREG
GND
(TO LUMINANCE & CHROMINANCE)
S-VHS Ⓛ
S-DET Ⓗ
EVF OUT
PB 5V
REC DATA
R.ERASE 5V
S.TAB 5V
R.ERASE ON Ⓛ
S-TAPE Ⓛ
6
7
8
9
10
11
12
13
14
15
16
17

SYSTEM CONTROL ICs DC VOLTAGE CHART (SP MODE)

REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	4.8	4.8	0	0	4.8	0	4.8	4.8	0	0	0	4.8	3.9	0	0	0	3.5	0	0	0
REC/PLAY	0	4.8	0	0	4.8	0	4.8	4.9	0	—	2.3	4.8	3.9	0	0	0	3.5	0	—	0.4
FF	0	4.8	0	0	4.8	0	4.8	4.8	0	4.7	0	4.8	3.9	0	0	0	3.5	2.3	2.3	0.1

REF. NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	0	4.0	4.7	3.8	3.8	4.3	0.5	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	0	2.9	0
REC/PLAY	4.8	4.0	4.7	3.8	3.8	4.3	0.5	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.7	4.8	0	2.9	3.3
FF	0.1	0.1	4.7	3.1	3.8	4.3	0.5	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	2.2	4.8	0	2.9	3.3

REF. NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	4.8	4.8	4.8	0	4.6	0	4.8	0	0	4.9	4.8	4.8	4.8	4.9	2.6	2.5	0	4.6	4.6	4.6
REC/PLAY	4.8	4.8	4.8	0.1	4.8	0	4.8	0	0	4.8	4.8	4.8	4.8	4.9	2.6	2.5	0.8	4.7	4.7	4.7
FF	4.9	4.8	4.8	0	4.7	0	4.8	0	0	4.8	4.8	4.8	4.9	4.9	2.6	2.6	0.8	4.8	4.7	4.7

REF. NO.	IC6001																			
MODE	61	62	63	64																
STOP	0	4.6	4.6	4.6																
REC/PLAY	—	4.8	4.8	4.8																
FF	4.3	4.8	4.8	4.8																

REF. NO.	IC6002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	4.8	0	2.6	0	4.8	0	2.6	2.6	0	0	0	0	0	0	0	0	3.9	3.7	0.5
REC/PLAY	0	4.4	0	3.8	0.1	4.7	1.7	2.4	2.2	0	0.4	3.8	3.8	3.9	3.9	0	0	3.9	3.7	4.8
FF	0	4.4	0	3.8	0	4.8	1.7	2.3	2.2	0	0	0	0	0	0	0	0	3.9	3.7	4.8

REF. NO.	IC6003										IC6004									
MODE	1	2	3	4	5						1	2	3	4	5	6	7	8		
STOP	2.6	4.5	0	0	4.8						0	2.9	2.3	0	3.6	3.0	4.8	4.8		
REC/PLAY	3.9	4.2	0	—	4.8						—	—	2.3	0	3.4	3.0	4.7	4.8		
FF	3.9	4.2	0	4.2	4.8						2.2	2.2	2.4	0	3.4	3.0	4.8	4.8		

REF. NO.	IC6005										IC6006									
MODE	1	2	3								1	2	3							
STOP	0	4.9	4.8								0	6.4	4.9							
REC/PLAY	0	4.9	4.9								0	6.3	4.9							
FF	0	4.9	4.9								0	6.3	4.9							

REF. NO.	IC6007																			
MODE	1	2	3	4	5	6	7	8	9	10										
STOP	0.2	0	0	0	0.1	6.5	4.8	0	4.8	6.5										
REC/PLAY	0.1	0	0	0	0.1	6.3	4.8	0	4.8	6.3										
FF	0.4	0	0.1	0	0.4	6.3	4.8	0.5	4.8	6.3										

SYSTEM CONTROL TRANSISTORs DC VOLTAGE CHART (SP MODE)

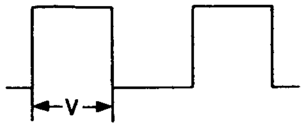
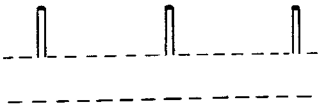
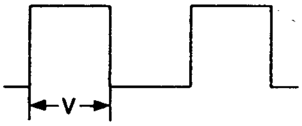
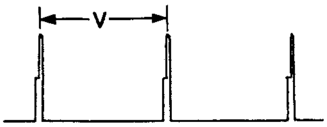
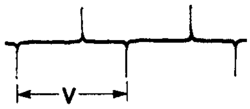
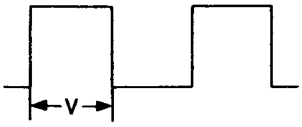
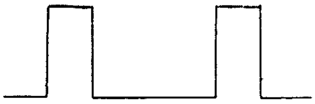
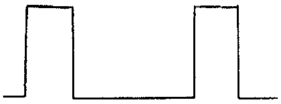
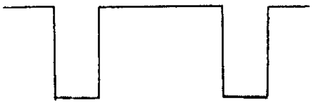
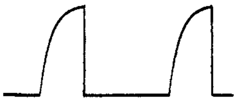
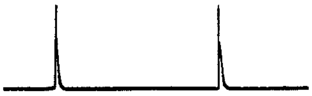
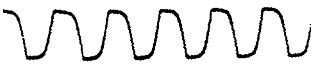
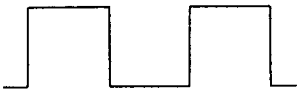
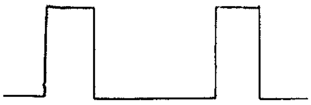
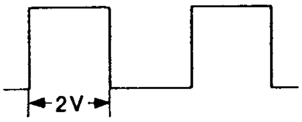
REF. NO.	Q6001			Q6002			Q6003											
MODE	E	C	B	E	C	B	E	C	B									
STOP	1.5	4.7	0	0.1	6.4	0	4.8	0	0									
REC/PLAY	3.6	4.7	3.8	0.1	6.3	0.1	4.8	0	4.8									
FF	1.5	4.7	0	2.3	6.3	2.5	4.8	0	4.8									

REF. NO.	QR6001			QR6002 Ⓐ			QR6002 Ⓑ			QR6003			QR6004			QR6005		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	4.8	0	4.7	0.9	4.8	0	0.9	4.8	1.5	4.6	4.6	4.2	4.8	0	4.7	4.6	4.6	0
REC/PLAY	4.8	0	0	0	4.8	1.7	0	4.8	1.4	4.8	4.8	4.4	4.7	—	—	4.8	4.7	0
FF	4.8	0	4.7	0.9	4.8	0	0.9	4.8	1.5	4.8	4.8	4.4	4.8	2.3	3.5	4.8	4.7	0

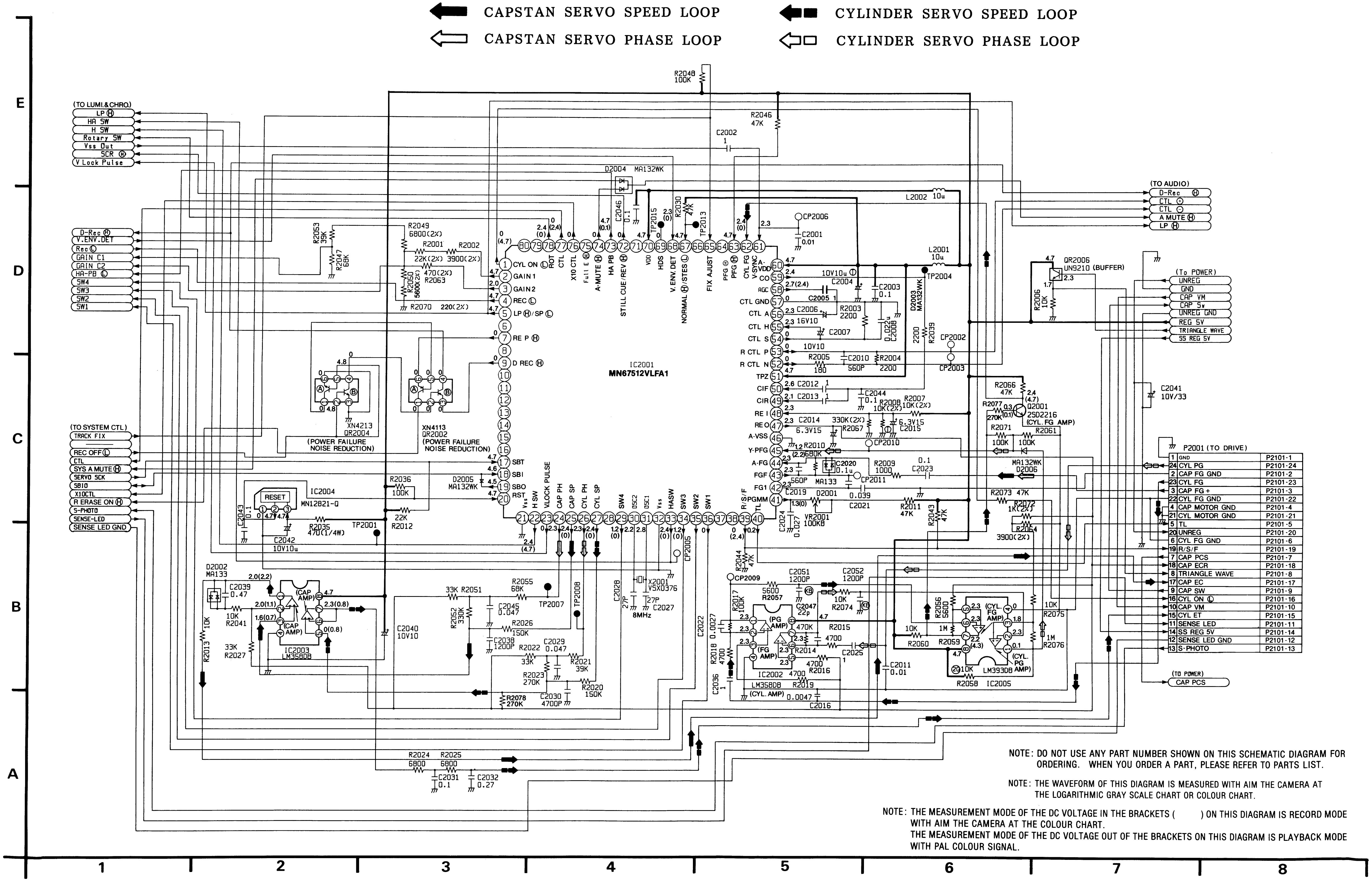
REF. NO.	QR6006			QR6007			QR6008			QR6009 Ⓐ			QR6009 Ⓑ			QR6010 Ⓐ		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	4.8	0	4.8	3.9	4.8	0	0	4.8	0	0	0.1	4.6	0	0	6.8	4.8	4.8	4.1
REC/PLAY	4.8	0.1	4.7	3.9	4.5	0.8	0	4.8	0	0	0.1	4.8	0	0	6.7	4.8	4.7	4.0
FF	4.8	2.5	2.2	3.9	4.4	0.8	0	4.8	0	0	0.1	4.8	0	0	6.7	4.8	4.7	4.1

REF. NO.	QR6010 Ⓑ			QR6011			QR6012			QR6013			QR6014					
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B			
STOP	4.8	4.8	4.1	4.8	0	4.8	0	4.8	0	0	0	4.0	0	0	0			
REC/PLAY	4.8	4.8	4.1	4.8	0	4.8	0	4.8	0	0	0	4.0	0	0	0			
FF	4.8	4.8	4.1	4.8	0	4.8	0	4.7	0	4.7	4.8	4.0	0	0	0			

SERVO CIRCUIT WAVEFORM

IC2001-㉒  4.5Vp-p (REC/PLAY)	IC2001-㊺  4.0Vp-p (REC/PLAY)	IC2001-(78)  4.7Vp-p (REC/PLAY)	
IC2001-㉓  4.5Vp-p (STILL)	IC2001-㊾, ㊿  2.0Vp-p (PLAY)		
IC2001-㉝  4.5Vp-p	IC2001-(52)  5.0Vp-p (REC)		
IC2001-㉙, ㉞, ㉟, ㊱  4.5Vp-p (REC/PLAY)	IC2001-(53)  5.0Vp-p (REC)		
IC2001-㊶  4.5Vp-p (REC/PLAY)	IC2001-(61)  1.7Vp-p (REC/PLAY)		
IC2001-㊷  0.8Vp-p (REC/PLAY)	IC2001-(62)  4.7Vp-p (REC/PLAY)		
IC2001-㊹  4.5Vp-p (REC)	IC2001-(77)  4.7Vp-p (PLAY)		

3-17. SERVO SCHEMATIC DIAGRAM


CAPSTAN SERVO SPEED LOOP
CAPSTAN SERVO PHASE LOOP
CYLINDER SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP
E
D
C
B
A
1
2
3
4
5
6
7
8
(TO LUMI.&CHRO.)
LP Ⓗ
HA SW
H SW
Rotary SW
Vss Out
SCR Ⓗ
V Lock Pulse
D-Rec Ⓗ
V.ENV.DET
Rec Ⓛ
GAIN C1
GAIN C2
HA-PB Ⓛ
SW4
SW3
SW2
SW1
(TO SYSTEM CTL)
TRACK FIX
REC OFF Ⓛ
CTL
SYS A MUTE Ⓗ
SERVO SCK
SBIO
X10CTL
R ERASE ON Ⓗ
S-PHOTO
SENSE-LED
SENSE LED GND
IC2001
MN67512VLFA1
IC2004
MN12821-Q
RESET
IC2003
LM358DB
IC2002
LM358DB
IC2005
LM3930B
XN4213
QR2004
(POWER FAILURE NOISE REDUCTION)
XN4113
QR2002
(POWER FAILURE NOISE REDUCTION)
QR2006
UN9210 (BUFFER)
Q2001
2SD2216
(CYL.FG AMP)
D2004 MA132WK
D2005 MA132WK
D2002 MA133
D2003 MA132WK
X2001 VSX0376 8MHz
L2001 10u
L2002 10u
R2048 100K
R2046 47K
C2002 1
(TO AUDIO)
D-Rec Ⓗ
CTL ⊕
CTL ⊖
A MUTE Ⓗ
LP Ⓗ
(To POWER)
UNREG
GND
CAP VM
CAP 5v
UNREG GND
REG 5V
TRIANGLE WAVE
SS REG 5V
C2041 10V/33
P2001 (TO DRIVE)
(TO POWER)
CAP PCS
(CAP AMP)
(PG AMP)
(FG AMP)
(CYL. AMP)
(CYL. FG AMP)
(CYL. PG AMP)
TP2001
TP2004
TP2007
TP2008
TP2013
TP2015
CP2002
CP2003
CP2005
CP2006
CP2009
CP2010
CP2011

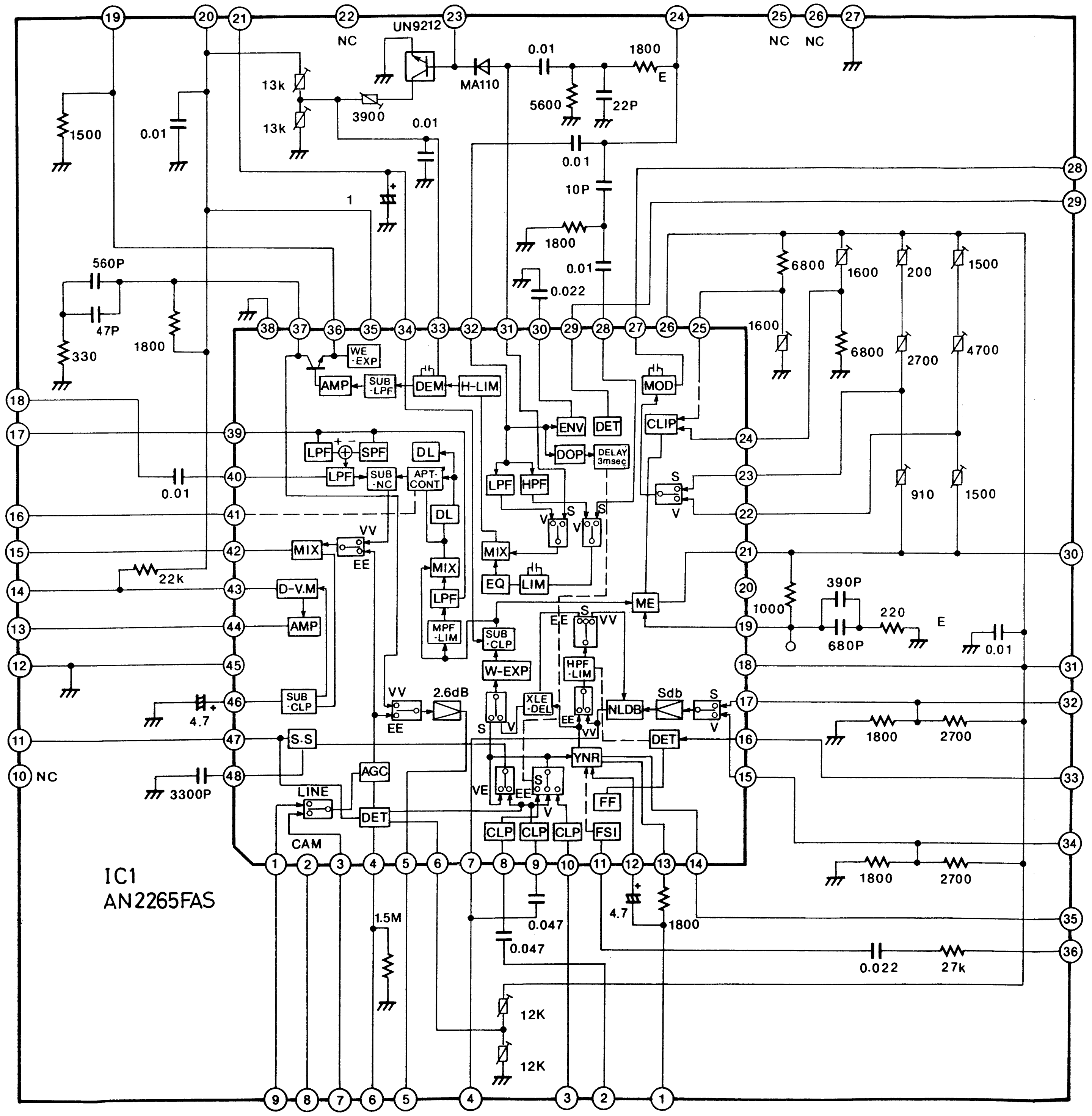
1	GND	P2101-1
24	CYL PG	P2101-24
2	CAP FG GND	P2101-2
23	CYL FG	P2101-23
3	CAP FG +	P2101-3
22	CYL FG GND	P2101-22
4	CAP MOTOR GND	P2101-4
21	CYL MOTOR GND	P2101-21
5	TL	P2101-5
20	UNREG	P2101-20
6	CYL FG GND	P2101-6
19	R/S/F	P2101-19
7	CAP PCS	P2101-7
18	CAP ECR	P2101-18
8	TRIANGLE WAVE	P2101-8
17	CAP EC	P2101-17
9	CAP SW	P2101-9
16	CYL ON Ⓛ	P2101-16
10	CAP VM	P2101-10
15	CYL ET	P2101-15
11	SENSE LED	P2101-11
14	SS REG 5V	P2101-14
12	SENSE LED GND	P2101-12
13	S-PHOTO	P2101-13

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE WAVEFORM OF THIS DIAGRAM IS MEASURED WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART OR COLOUR CHART.

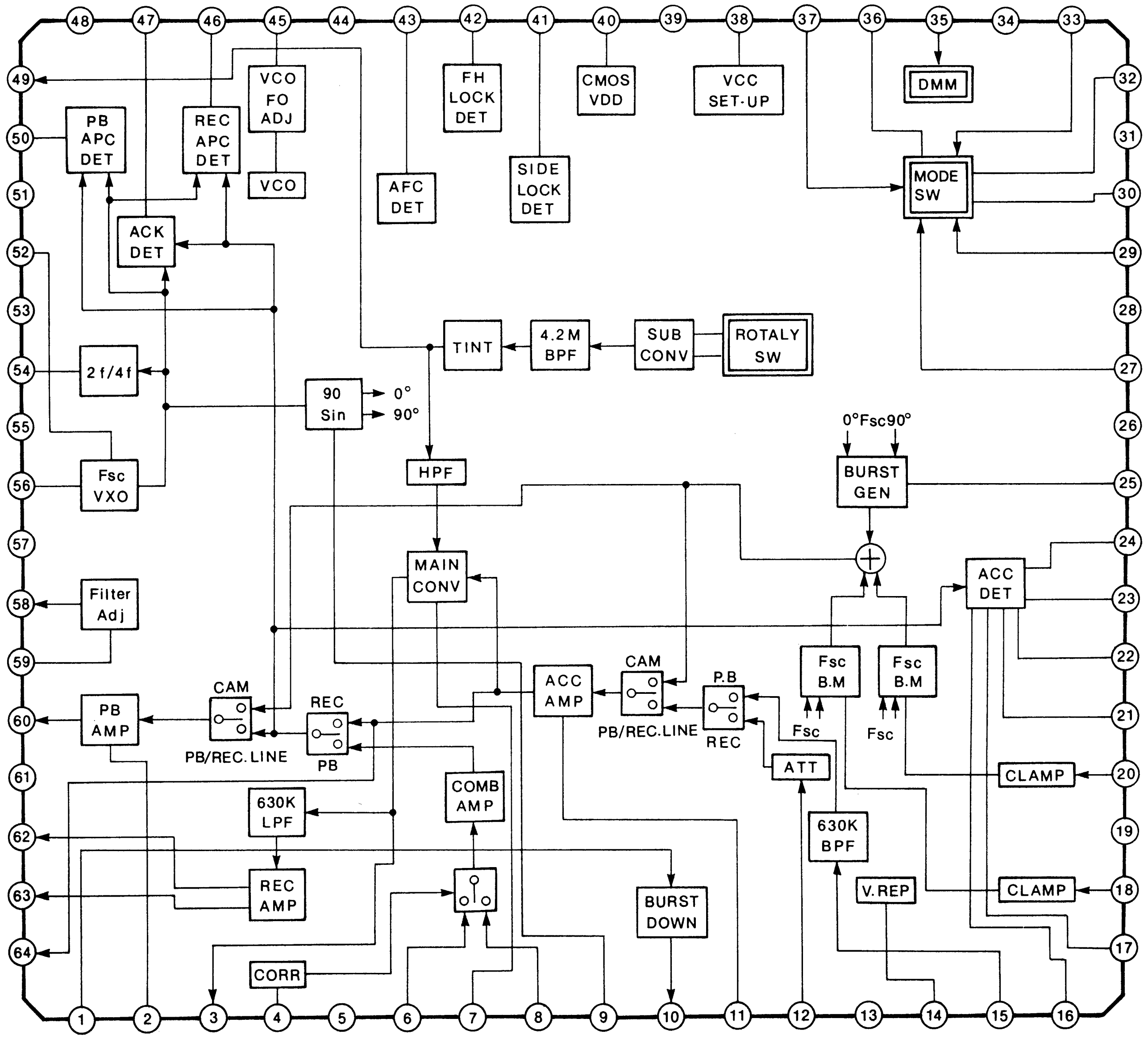
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS (   ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

IC3001 (VEF-H18B)



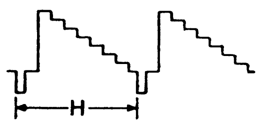
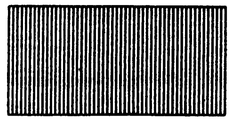
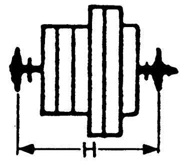
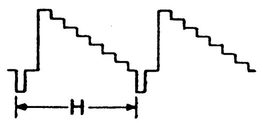
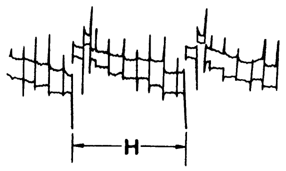
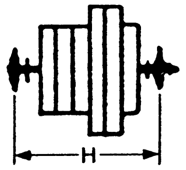
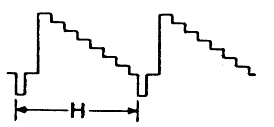
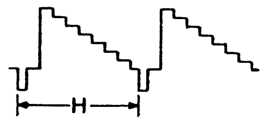
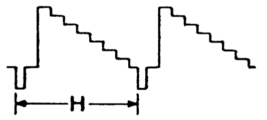
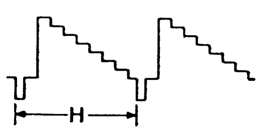
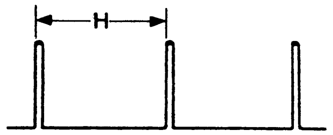
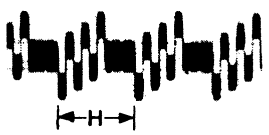
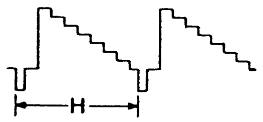
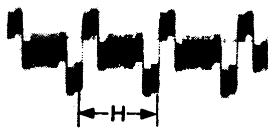
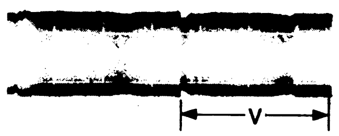
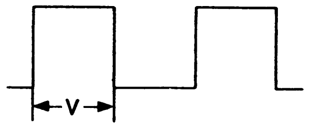
UN9212
MA110
NC
NC NC
13k
13k
3900
5600
22P
0.01
1800
E
1500
0.01
10P
1
560P
47P
330
1800
1600
6800
200
1500
2700
4700
910
1500
390P
680P
1000
220
0.01
1800
2700
1800
2700
0.022
27k
22k
4.7
3300P
1.5M
0.047
0.047
4.7
1800
12K
12K
WE·EXP
AMP
SUB·LPF
DEM
H-LIM
MOD
CLIP
ENV
DET
DOP
DELAY 3msec
LPF
SPF
DL
SUB·NC
APT·CONT
HPF
MIX
EQ
LIM
ME
D-V.M
AMP
SUB·CLP
S.S
AGC
LINE
CAM
DET
VV
EE
2.6dB
Sdb
NLDB
YNR
XLE·DEL
HPF·LIM
W-EXP
MPF·LIM
CLP
FF
FSI
VE
IC1
AN2265FAS
NC

IC8001 (AN2465FNP)

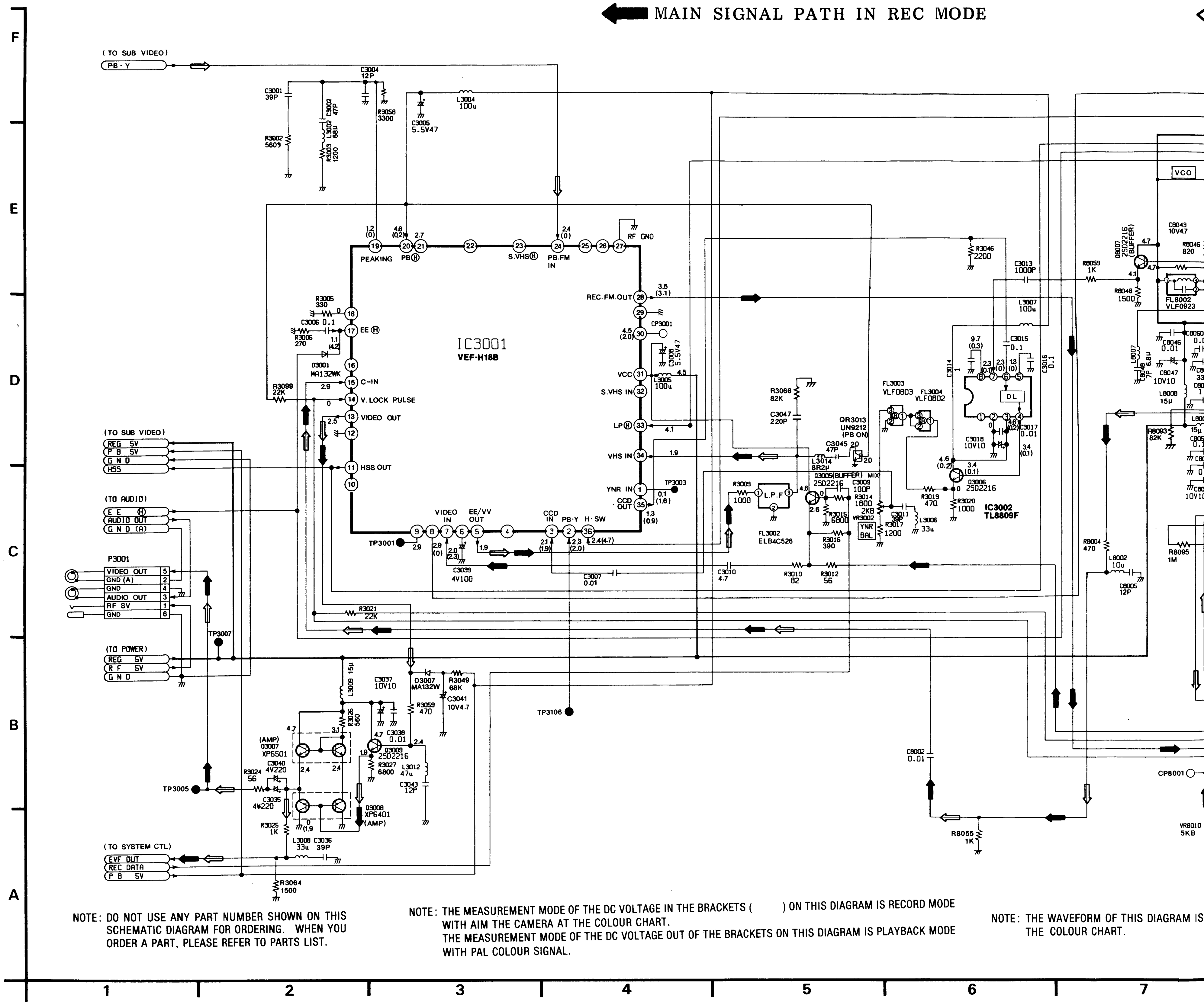


PB APC DET
REC APC DET
VCO FO ADJ
VCO
FH LOCK DET
CMOS VDD
VCC SET-UP
DMM
MODE SW
AFC DET
SIDE LOCK DET
ACK DET
TINT
4.2M BPF
SUB CONV
ROTALY SW
2f/4f
90 Sin
0°
90°
0°Fsc90°
BURST GEN
Fsc VXO
HPF
MAIN CONV
ACC DET
Filter Adj
ACC AMP
CAM
PB/REC.LINE
P.B
REC
Fsc
Fsc B.M
Fsc B.M
Fsc
PB AMP
PB/REC.LINE
PB
ATT
COMB AMP
630K LPF
630K BPF
CLAMP
V.REP
CLAMP
REC AMP
BURST DOWN
CORR

LUMINANCE & CHROMINANCE CIRCUIT WAVEFORM

IC3001-②  0.35 Vp-p (REC/PLAY)	IC3001-㉘  0.9 Vp-p (REC)	IC8001-(60)  0.6 Vp-p (REC/PLAY)
IC3001-③  0.3 Vp-p (REC/PLAY)	IC3001-㉚  0.7 Vp-p (REC)	IC8001-(62)  0.7 Vp-p (REC)
IC3001-⑤  0.4 Vp-p (REC)	IC3001-㉞  0.2 Vp-p (REC)	
IC3001-⑦  0.47 Vp-p (REC)	IC3001-㉞  0.34 Vp-p (PLAY)	
IC3001-⑪  4.4 Vp-p (REC/PLAY)	IC8001-⑱  0.2 Vp-p (REC)	
IC3001-⑬  2.0 Vp-p (REC/PLAY)	IC8001-⑳  0.28 Vp-p (REC)	
IC3001-㉔  1.0 Vp-p (PLAY)	IC8001-(33), (37)  4.7 Vp-p (REC/PLAY)	

3-18. LUMINANCE & CHROMINANCE SCHEMATIC DIAGRAM

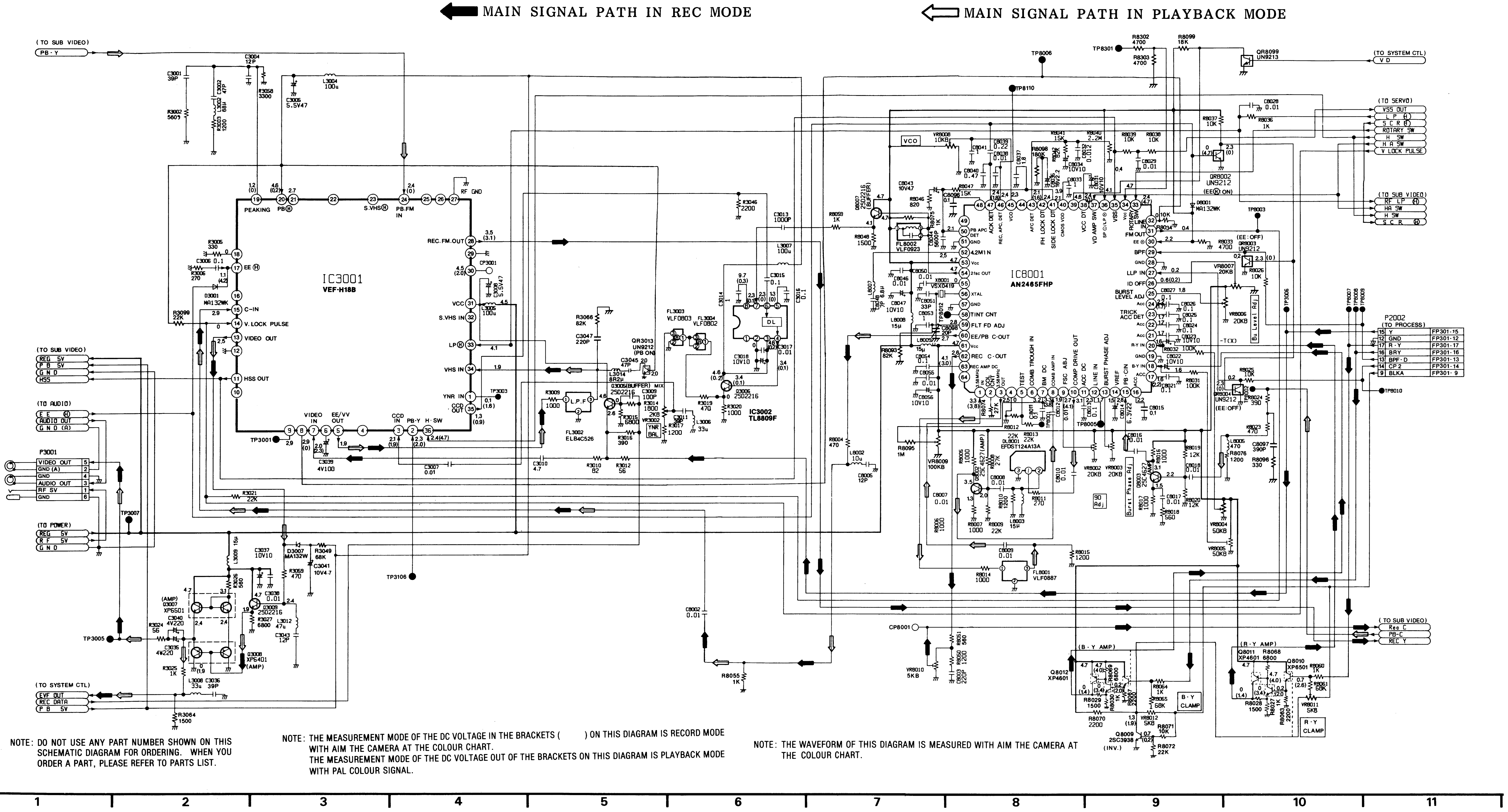

MAIN SIGNAL PATH IN REC MODE
F
E
D
C
B
A
1
2
3
4
5
6
7
(TO SUB VIDEO)
PB·Y
IC3001
VEF-H18B
PEAKING
S.VHS
PB.FM IN
RF GND
REC.FM.OUT
EE
C-IN
V.LOCK PULSE
VIDEO OUT
HSS OUT
VCC
S.VHS IN
LP
VHS IN
YNR IN
CCD OUT
VIDEO IN
EE/VV OUT
CCD IN
PB·Y
H·SW
TP3001
(TO SUB VIDEO)
REG 5V
P B 5V
G N D
HSS
(TO AUDIO)
E E
AUDIO OUT
G N D (A)
P3001
VIDEO OUT
GND (A)
GND
AUDIO OUT
RF 5V
GND
TP3007
(TO POWER)
REG 5V
R F 5V
G N D
TP3005
(AMP) Q3007 XP6501
Q3008 XP6401 (AMP)
Q3009 2SD2216
D3007 MA132W
TP3106
(TO SYSTEM CTL)
EVF OUT
REC DATA
P B 5V
D3001 MA132WK
L.P.F
FL3002 ELB4C526
Q3005(BUFFER) MIX 2SD2216
QR3013 UN9212 (PB ON)
FL3003 VLF0803
FL3004 VLF0802
YNR BAL
Q3006 2SD2216
IC3002 TL8809F
DL
VCO
FL8002 VLF0923
CP8001
VR8010 5KB

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

NOTE: THE WAVEFORM OF THIS DIAGRAM IS THE COLOUR CHART.

LUMINANCE & CHROMINANCE SCHEMATIC DIAGRAM



MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
(TO SUB VIDEO)
PB-Y
IC3001
VEF-H18B
PEAKING
PB(H)
S.VHS(H)
PB-FM IN
RF GND
REC.FM.OUT
VCC
S.VHS IN
LP(H)
VHS IN
YNR IN
CCD OUT
EE (H)
C-IN
V.LOCK PULSE
VIDEO OUT
HSS OUT
VIDEO IN
EE/VV OUT
CCD IN
PB-Y
H-SW
TP3001
TP3003
TP3005
TP3007
TP3106
IC3002
TL8809F
Q3005(BUFFER) MIX
2SD2216
Q3006
2SD2216
FL3002
ELB4C526
FL3003
VLF0803
FL3004
VLF0802
L.P.F
DL
QR3013
UN9212
(PB ON)
YNR BAL
(TO SUB VIDEO)
REG 5V
P B 5V
G N D
HSS
(TO AUDIO)
E E (H)
AUDIO OUT
G N D (A)
P3001
VIDEO OUT
GND (A)
GND
AUDIO OUT
RF 5V
GND
(TO POWER)
REG 5V
R F 5V
G N D
(TO SYSTEM CTL)
EVF OUT
REC DATA
P B 5V
(AMP)
Q3007
XP6501
Q3008
XP6401
(AMP)
Q3009
2SD2216
D3007
MA132W
D3001
MA132WK
IC8001
AN2465FHP
VCO
Q8007
2SD2216
(BUFFER)
FL8002
VLF0923
X8001
VSX0419
TP8006
TP8110
TP8301
TP8003
TP8005
TP8010
QR8099
UN9213
(TO SYSTEM CTL)
V D
(TO SERVO)
VSS OUT
L P (H)
S C R (H)
ROTARY SW
H SW
H A SW
V LOCK PULSE
QR8002
UN9212
(EE(H) ON)
D8001
MA132WK
(TO SUB VIDEO)
RF LP (H)
HA SW
H SW
S C R (H)
(EE:OFF)
QR8003
UN9212
QR8004
UN9212
(EE:OFF)
P2002
(TO PROCESS)
Y
GND
R-Y
BRY
BPF-D
CP 2
BLKA
FP301-15
FP301-12
FP301-17
FP301-16
FP301-13
FP301-14
FP301-9
Bu Level Adj
Burst Phase Adj
90 Adj
DL8001
EFDST124A13A
Q8002
2SC4627(AMP)
Q8003
2SC4627
FL8001
VLF0887
CP8001
(B-Y AMP)
Q8012
XP4601
B-Y CLAMP
Q8009
2SC3938
(INV.)
(R-Y AMP)
Q8011
XP4601
Q8010
XP6501
R-Y CLAMP
(TO SUB VIDEO)
Rec C
PB-C
REC Y
1
2
3
4
5
6
7
8
9
10
11

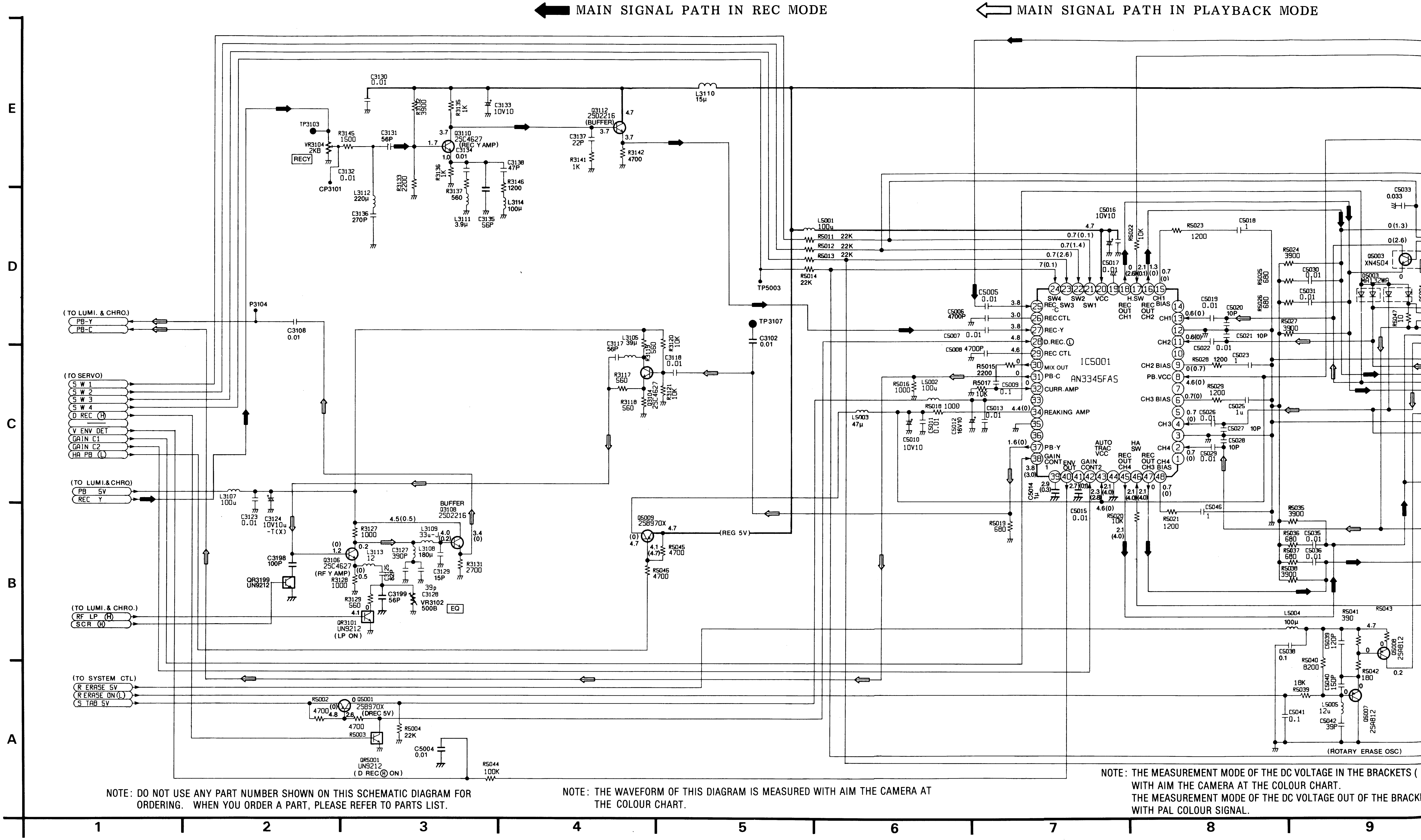
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS (   ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

NOTE: THE WAVEFORM OF THIS DIAGRAM IS MEASURED WITH AIM THE CAMERA AT THE COLOUR CHART.

Next Page:
SUB VIDEO Section

3-19. SUB VIDEO SCHEMATIC DIAGRAM


MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
(TO LUMI. & CHRO.)
PB-Y
PB-C
(TO SERVO)
S W 1
S W 2
S W 3
S W 4
D REC (H)
V ENV DET
GAIN C1
GAIN C2
HA PB (L)
(TO LUMI.&CHRO)
PB 5V
REC Y
(TO LUMI. & CHRO.)
RF LP (H)
SCR (H)
(TO SYSTEM CTL)
R ERASE 5V
R ERASE ON(L)
S TAB 5V
Q3110 2SC4627 (REC Y AMP)
Q3112 2SD2216 (BUFFER)
Q3104 2SC4627
Q3106 2SC4627 (RF Y AMP)
BUFFER Q3108 2SD2216
QR3199 UN9212
QR3101 UN9212 (LP ON)
Q5009 2SB970X
Q5001 2SB970X (DREC 5V)
QR5001 UN9212 (D REC (H) ON)
(REG 5V)
RECY
EQ
TP3103
CP3101
P3104
TP3107
TP5003
IC5001
AN3345FAS
SW4
SW2
VCC
SW3
SW1
REC OUT CH1
H.SW
REC OUT CH2
CH1 BIAS
REC SW3·C
REC CTL
REC·Y
D.REC.(L)
REC CTL
MIX OUT
PB·C
CURR.AMP
REAKING AMP
PB·Y
GAIN CONT 1
ENV OUT
GAIN CONT2
AUTO TRAC VCC
REC OUT CH4
HA SW
REC OUT CH3
CH4 BIAS
CH2 BIAS
PB.VCC
CH3 BIAS
CH1
CH2
CH3
CH4
Q5003 XN4504
D5003 MA132WA
Q5006 2SA812
Q5007 2SA812
(ROTARY ERASE OSC)
E
D
C
B
A
1
2
3
4
5
6
7
8
9

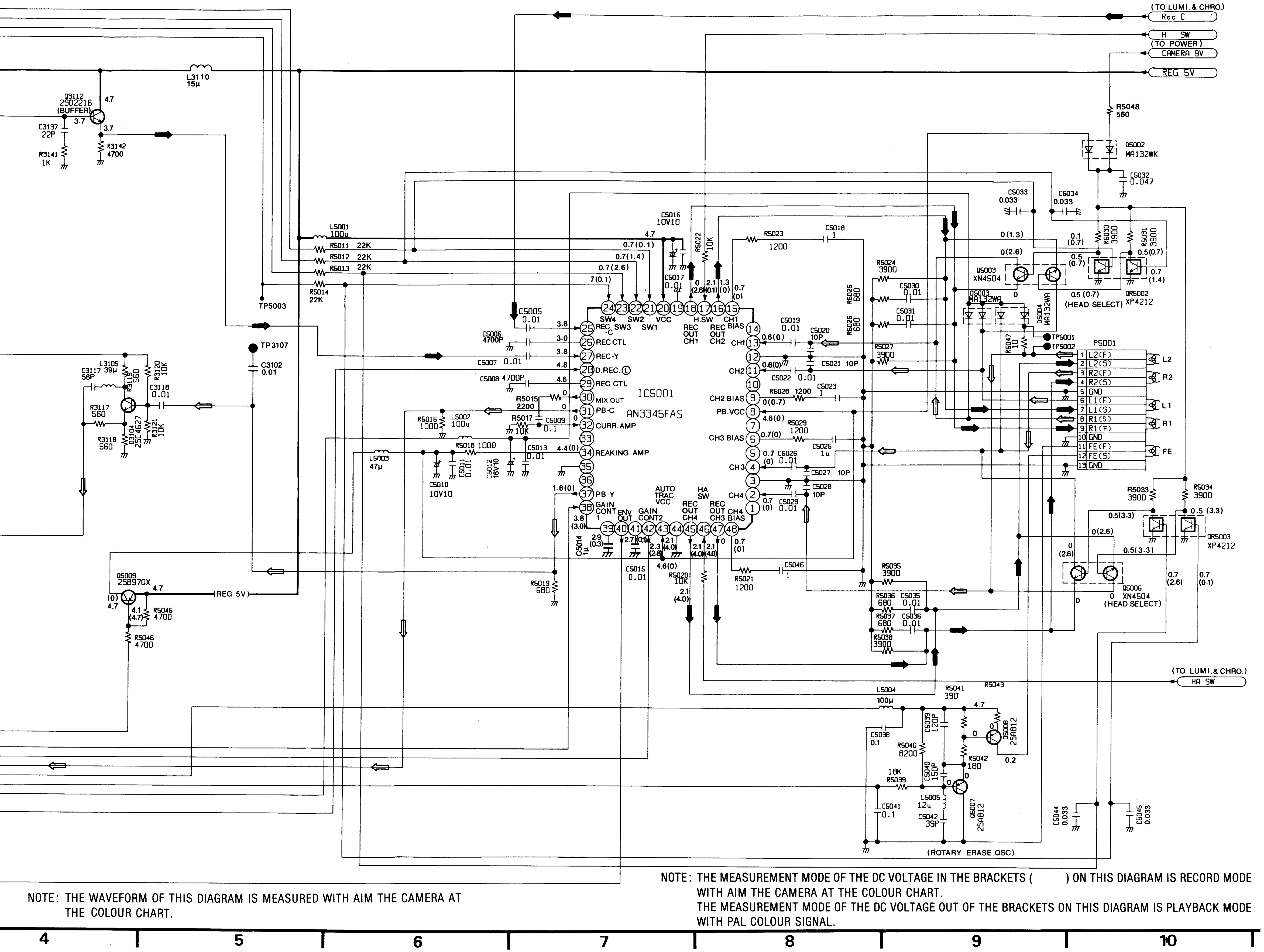
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE WAVEFORM OF THIS DIAGRAM IS MEASURED WITH AIM THE CAMERA AT THE COLOUR CHART.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS (
WITH AIM THE CAMERA AT THE COLOUR CHART.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACK
WITH PAL COLOUR SIGNAL.

MAIN SIGNAL PATH IN REC MODE

MAIN SIGNAL PATH IN PLAYBACK MODE

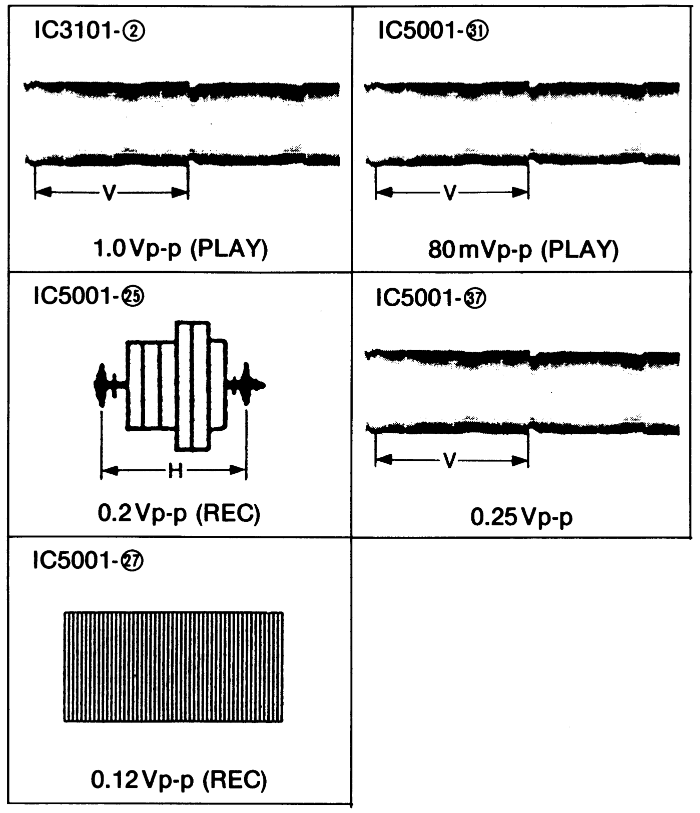


(TO LUMI.& CHRO.)
Rec C
H SW
(TO POWER)
CAMERA 9V
REG 5V
L3110 15μ
Q3112 2SD2216 (BUFFER)
4.7
3.7
C3137 22P
R3141 1K
R3142 4700
TP5003
TP3107
C3102 0.01
L3105 39μ
C3117 56P
R3119 560
R3120 10K
C3118 0.01
R3117 560
R3118 560
Q3104 2SC4627
R3121 10K
Q5009 2SB970X
(REG 5V)
R5045 4700
R5046 4700
L5001 100u
R5011 22K
R5012 22K
R5013 22K
R5014 22K
C5016 10V10
R5022 10K
R5023 1200
C5018 1
C5005 0.01
C5006 4700P
C5007 0.01
C5008 4700P
R5015 2200
R5016 1000
L5002 100u
R5017 10K
C5009 0.1
R5018 1000
C5013 0.01
L5003 47μ
C5010 10V10
C5011 0.01
C5012 16V10
C5014 1μ
C5015 0.01
R5019 680
R5020 10K
R5021 1200
IC5001 AN3345FAS
SW4 SW3 SW2 SW1 VCC H.SW REC OUT CH1 REC OUT CH2 CH1 BIAS
REC-C
REC CTL
REC-Y
D.REC.Ⓛ
REC CTL
MIX OUT
PB-C
CURR.AMP
REAKING AMP
PB-Y
GAIN CONT 1
ENV OUT
GAIN CONT2
AUTO TRAC VCC
HA SW
REC OUT CH4
REC OUT CH3
CH4 BIAS
CH3 BIAS
CH1 CH2 CH2 BIAS PB.VCC CH3 CH4
C5019 0.01
C5020 10P
C5021 10P
C5022 0.01
R5028 1200
C5023 1
R5029 1200
C5025 1u
C5026 0.01
C5027 10P
C5028 10P
C5029 0.01
C5046 1
R5024 3900
R5025 680
R5026 680
R5027 3900
C5030 0.01
C5031 0.01
Q5003 XN4504
D5003 MA132WA
D5004 MA132WA
R5047 10
(HEAD SELECT)
QRS002 XP4212
R5048 560
D5002 MA132WK
C5032 0.047
C5033 0.033
C5034 0.033
R5030 3900
R5031 3900
TP5001
TP5002
P5001
1 L2(F) 2 L2(S) 3 R2(F) 4 R2(S) 5 GND 6 L1(F) 7 L1(S) 8 R1(S) 9 R1(F) 10 GND 11 FE(F) 12 FE(S) 13 GND
L2 R2 L1 R1 FE
R5033 3900
R5034 3900
QRS003 XP4212
Q5006 XN4504 (HEAD SELECT)
R5035 3900
R5036 680
C5035 0.01
R5037 680
C5036 0.01
R5038 3900
(TO LUMI.&CHRO.)
HA SW
L5004 100μ
R5041 390
R5043
C5038 0.1
C5039 120P
R5040 8200
Q5008 2SA812
R5042 180
R5039 18K
C5040 150P
L5005 12u
C5041 0.1
C5042 39P
Q5007 2SA812
C5044 0.033
C5045 0.033
(ROTARY ERASE OSC)
4 5 6 7 8 9 10

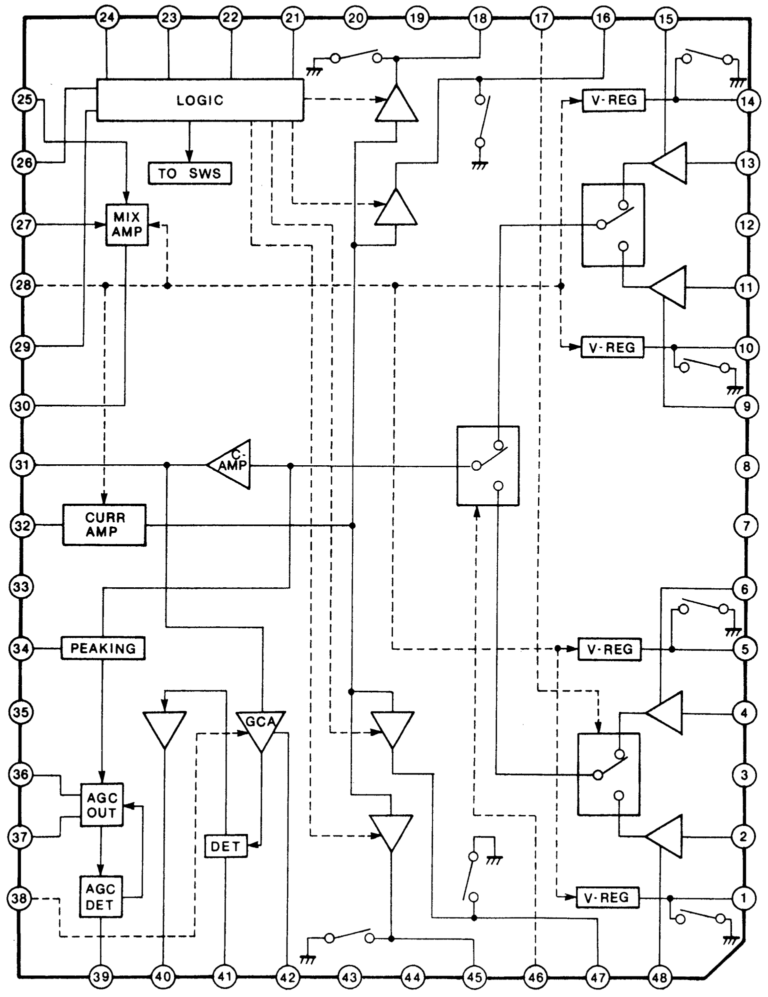
NOTE: THE WAVEFORM OF THIS DIAGRAM IS MEASURED WITH AIM THE CAMERA AT THE COLOUR CHART.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOUR CHART.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

SUB VIDEO CIRCUIT WAVEFORM



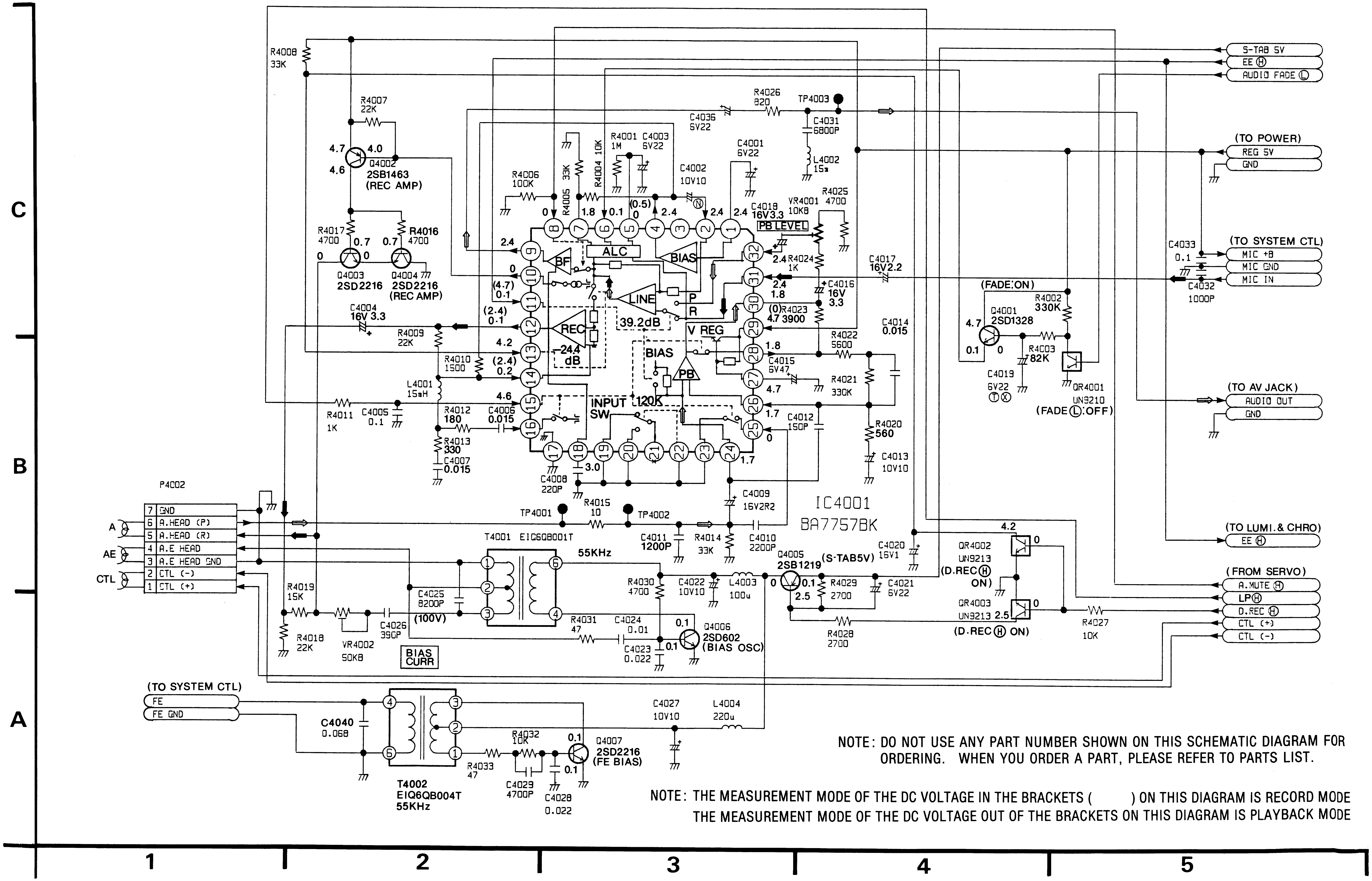
IC5001 (AN3345FAS)



LOGIC
TO SWS
MIX AMP
C AMP
CURR AMP
PEAKING
AGC OUT
AGC DET
GCA
DET
V-REG
V-REG
V-REG
V-REG

3-20. AUDIO SCHEMATIC DIAGRAM

MAIN SIGNAL PATH IN REC MODE MAIN SIGNAL PATH IN PLAYBACK MODE


C
B
A
1
2
3
4
5
IC4001
BA7757BK
R4008 33K
R4007 22K
4.7
4.0
4.6
Q4002 2SB1463 (REC AMP)
R4017 4700
R4016 4700
0.7
0
Q4003 2SD2216
Q4004 2SD2216 (REC AMP)
C4004 16V 3.3
R4009 22K
R4010 1500
L4001 15mH
R4011 1K
C4005 0.1
R4012 180
C4006 0.015
R4013 330
C4007 0.015
C4008 220P
R4006 100K
R4005 33K
R4004 10K
R4001 1M
C4003 6V22
C4002 10V10
C4001 6V22
C4036 6V22
R4026 820
TP4003
C4031 6800P
L4002 15m
R4025 4700
VR4001 10KB
C4018 16V3.3
PB LEVEL
R4024 1K
C4016 16V 3.3
R4023 3900
R4022 5600
C4015 6V47
R4021 330K
C4014 0.015
C4017 16V2.2
C4012 150P
R4020 560
C4013 10V10
C4009 16V2R2
ALC
BF
BIAS
LINE
39.2dB
REC
24.4 dB
V REG
PB
INPUT SW
120K
P
R
TP4001
R4015 10
TP4002
C4010 2200P
C4011 1200P
R4014 33K
T4001 EIC6Q8001T
55KHz
C4025 8200P (100V)
C4026 390P
R4019 15K
R4018 22K
VR4002 50KB
BIAS CURR
R4030 4700
C4022 10V10
L4003 100u
R4031 47
C4024 0.01
C4023 0.022
Q4006 2SD602 (BIAS OSC)
Q4005 2SB1219 (S-TAB5V)
R4029 2700
C4021 6V22
C4020 16V1
R4028 2700
QR4002 UN3213 (D.REC H ON)
QR4003 UN3213 (D.REC H ON)
R4027 10K
Q4001 2SD1328
R4002 330K
R4003 82K
C4019 6V22
QR4001 UN3210
(FADE:ON)
(FADE L:OFF)
C4033 0.1
C4032 1000P
P4002
7 GND
6 A.HEAD (P)
5 A.HEAD (R)
4 A.E HEAD
3 A.E HEAD GND
2 CTL (-)
1 CTL (+)
A
AE
CTL
(TO SYSTEM CTL)
FE
FE GND
C4040 0.068
T4002 EIQ6QB004T 55KHz
R4032 10K
R4033 47
C4029 4700P
C4028 0.022
Q4007 2SD2216 (FE BIAS)
C4027 10V10
L4004 220u
S-TAB 5V
EE H
AUDIO FADE L
(TO POWER)
REG 5V
GND
(TO SYSTEM CTL)
MIC +B
MIC GND
MIC IN
(TO AV JACK)
AUDIO OUT
GND
(TO LUMI.& CHRO)
EE H
(FROM SERVO)
A.MUTE H
LP H
D.REC H
CTL (+)
CTL (-)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE

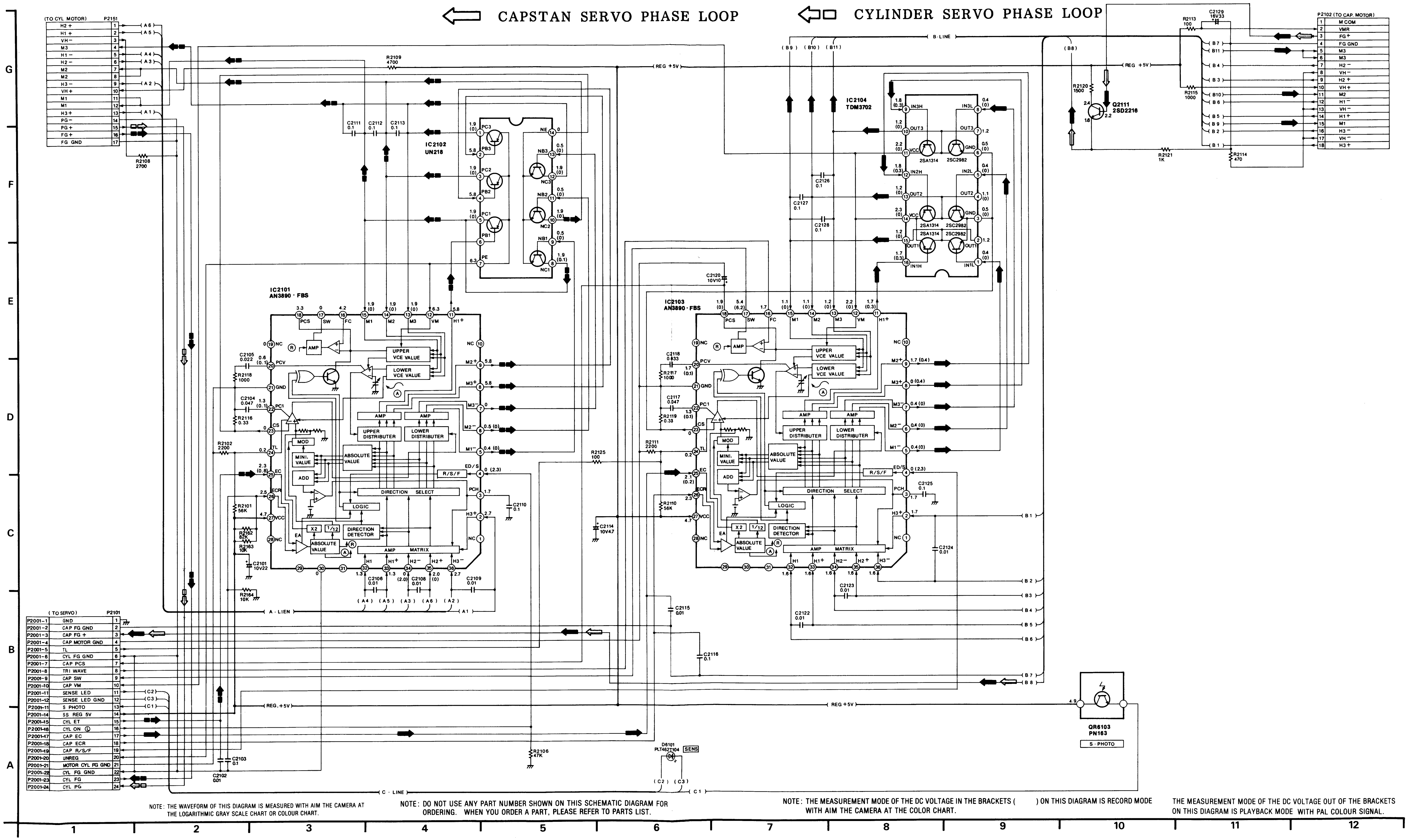
3-21. DRIVE SCHEMATIC DIAGRAM

◀ CAPSTAN SERVO SPEED LOOP

⇦ CAPSTAN SERVO PHASE LOOP

◀■ CYLINDER SERVO SPEED LOOP

⇦□ CYLINDER SERVO PHASE LOOP


(TO CYL MOTOR) P2151
1 H2 +
2 H1 +
3 VH −
4 M3
5 H1 −
6 H2 −
7 M2
8 M2
9 H3 −
10 VH +
11 M1
12 M1
13 H3 +
14 PG −
15 PG +
16 FG +
17 FG GND
(A6) (A5) (A4) (A3) (A2) (A1)
R2108 2700
R2109 4700
(REG +5V)
C2111 0.1
C2112 0.1
C2113 0.1
IC2102 UN218
PC3 PB3 PC2 PB2 PC1 PB1 PE NE NB3 NC3 NB2 NC2 NB1 NC1
IC2101 AN3890 · FBS
PCS SW FC M1 M2 M3 VM H1+
UPPER VCE VALUE
LOWER VCE VALUE
AMP
UPPER DISTRIBUTER
LOWER DISTRIBUTER
MOD
MINI. VALUE
ADD
ABSOLUTE VALUE
R/S/F
DIRECTION SELECT
LOGIC
X2
1/12
DIRECTION DETECTOR
AMP MATRIX
NC PCV GND PC1 CS TL EC ECR VCC EA
M2+ M3+ M3− M2− M1− ED/S PCH H3+
H1 H1+ H2− H2+ H3−
C2105 0.022
R2118 1000
C2104 0.047
R2116 0.33
R2102 2200
R2101 56K
R2162 82K
R2163 15K
C2101 10V22
R2164 10K
C2108 0.01
C2106 0.01
C2109 0.01
C2110 0.1
(A4) (A5) (A3) (A6) (A2)
(A · LIEN) (A1)
R2125 100
C2114 10V47
C2120 10V10
IC2103 AN3890 · FBS
C2118 0.033
R2117 1000
C2117 0.047
R2119 0.33
R2111 2200
R2110 56K
C2125 0.1
C2124 0.01
C2123 0.01
C2122 0.01
C2115 0.01
C2116 0.1
C2126 0.1
C2127 0.1
C2128 0.1
IC2104 TDM3702
IN3H IN3L OUT3 VCC GND IN2H IN2L OUT2 OUT1 IN1H IN1L
2SA1314 2SC2982
(B9) (B10) (B11) (B-LINE) (B8)
R2120 1500
Q2111 2SD2216
R2121 1K
R2113 100
C2129 16V33
R2115 1000
R2114 470
(B7) (B11) (B4) (B3) (B10) (B6) (B5) (B9) (B2) (B1)
P2102 (TO CAP. MOTOR)
1 M COM
2 VMR
3 FG +
4 FG GND
5 M3
6 M3
7 H2 −
8 VH −
9 H2 +
10 VH +
11 M2
12 H1 −
13 VH −
14 H1 +
15 M1
16 H3 −
17 VH −
18 H3 +
(B1) (B2) (B3) (B4) (B5) (B6) (B7) (B8)
QR6103 PN163
S · PHOTO
(TO SERVO) P2101
P2001−1 GND 1
P2001−2 CAP FG GND 2
P2001−3 CAP FG + 3
P2001−4 CAP MOTOR GND 4
P2001−5 TL 5
P2001−6 CYL FG GND 6
P2001−7 CAP PCS 7
P2001−8 TRI WAVE 8
P2001−9 CAP SW 9
P2001−10 CAP VM 10
P2001−11 SENSE LED 11
P2001−12 SENSE LED GND 12
P2001−11 S PHOTO 13
P2001−14 SS REG 5V 14
P2001−15 CYL ET 15
P2001−16 CYL ON Ⓛ 16
P2001−17 CAP EC 17
P2001−18 CAP ECR 18
P2001−19 CAP R/S/F 19
P2001−20 UNREG 20
P2001−21 MOTOR CYL FG GND 21
P2001−22 CYL FG GND 22
P2001−23 CYL FG 23
P2001−24 CYL PG 24
(C2) (C3) (C1)
(REG. +5V)
C2103 0.1
C2102 0.01
R2106 47K
D6101 PLT462T104 SENS
(C · LINE)
G F E D C B A
1 2 3 4 5 6 7 8 9 10 11 12

NOTE: THE WAVEFORM OF THIS DIAGRAM IS MEASURED WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART OR COLOUR CHART.

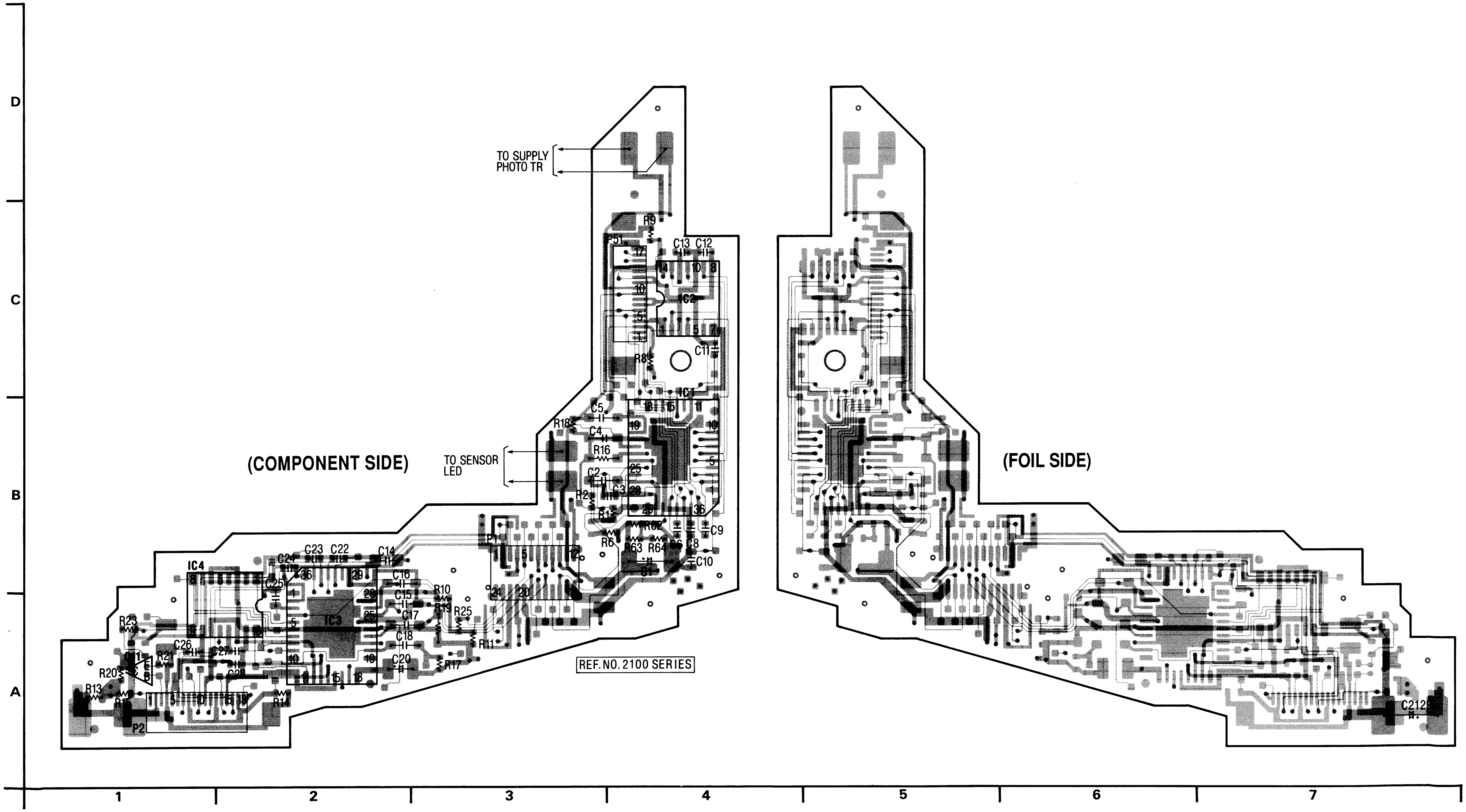
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH AIM THE CAMERA AT THE COLOR CHART.

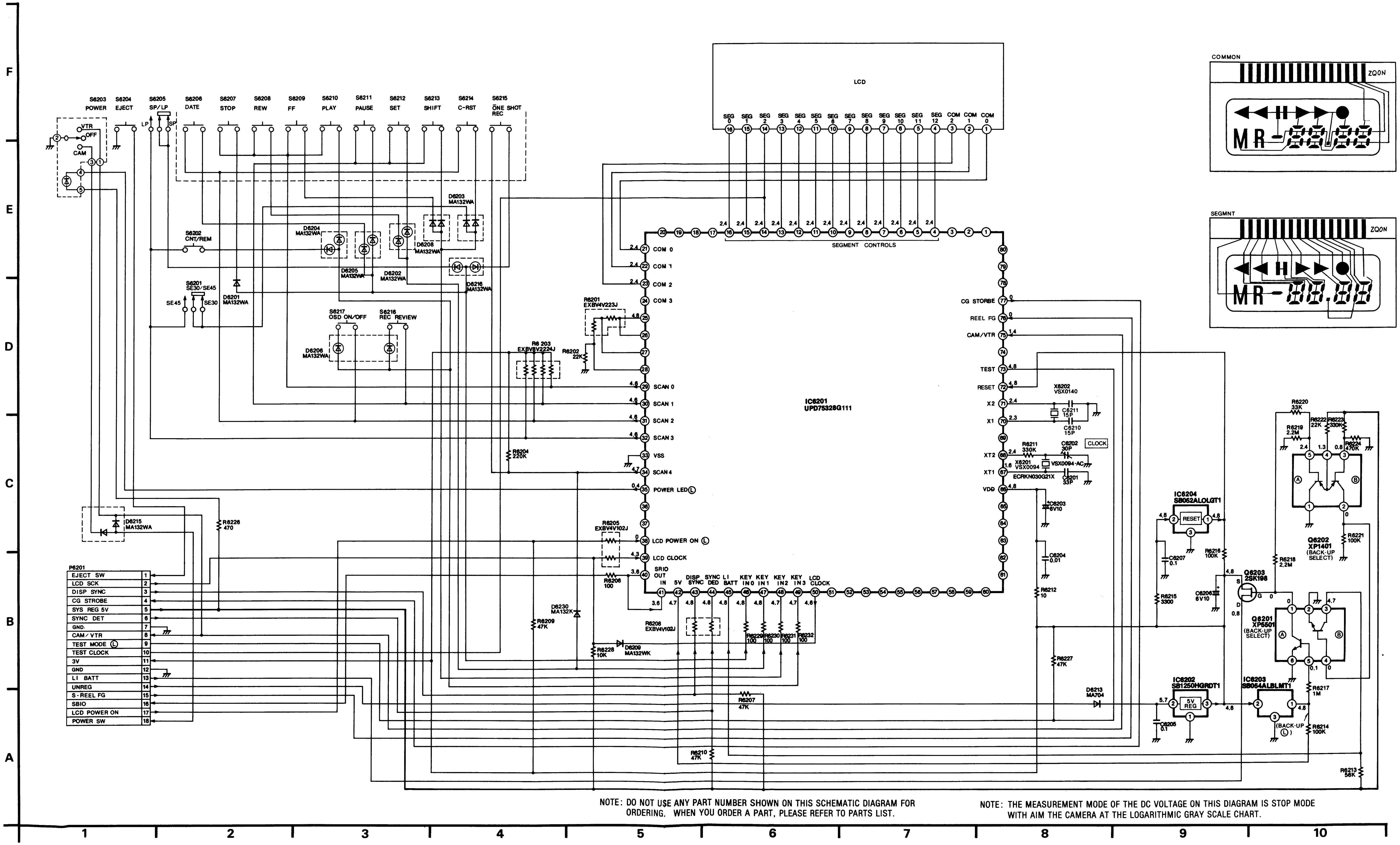
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

Back Page:
AUDIO Section

3-22. DRIVE C.B.A. (VEP02370A)


D
C
B
A
1
2
3
4
5
6
7
(COMPONENT SIDE)
(FOIL SIDE)
TO SUPPLY PHOTO TR
TO SENSOR LED
REF. NO. 2100 SERIES
IC1
IC2
IC3
IC4
P1
P2
P51
Q1
E
C
B
R1
R2
R6
R8
R9
R10
R11
R13
R14
R15
R16
R17
R18
R19
R20
R21
R23
R25
R62
R63
R64
C2
C3
C4
C5
C6
C8
C9
C10
C11
C12
C13
C14
C15
C16
C17
C18
C20
C22
C23
C24
C25
C26
C27
C28
C212

3-23. VTR OPERATION SCHEMATIC DIAGRAM



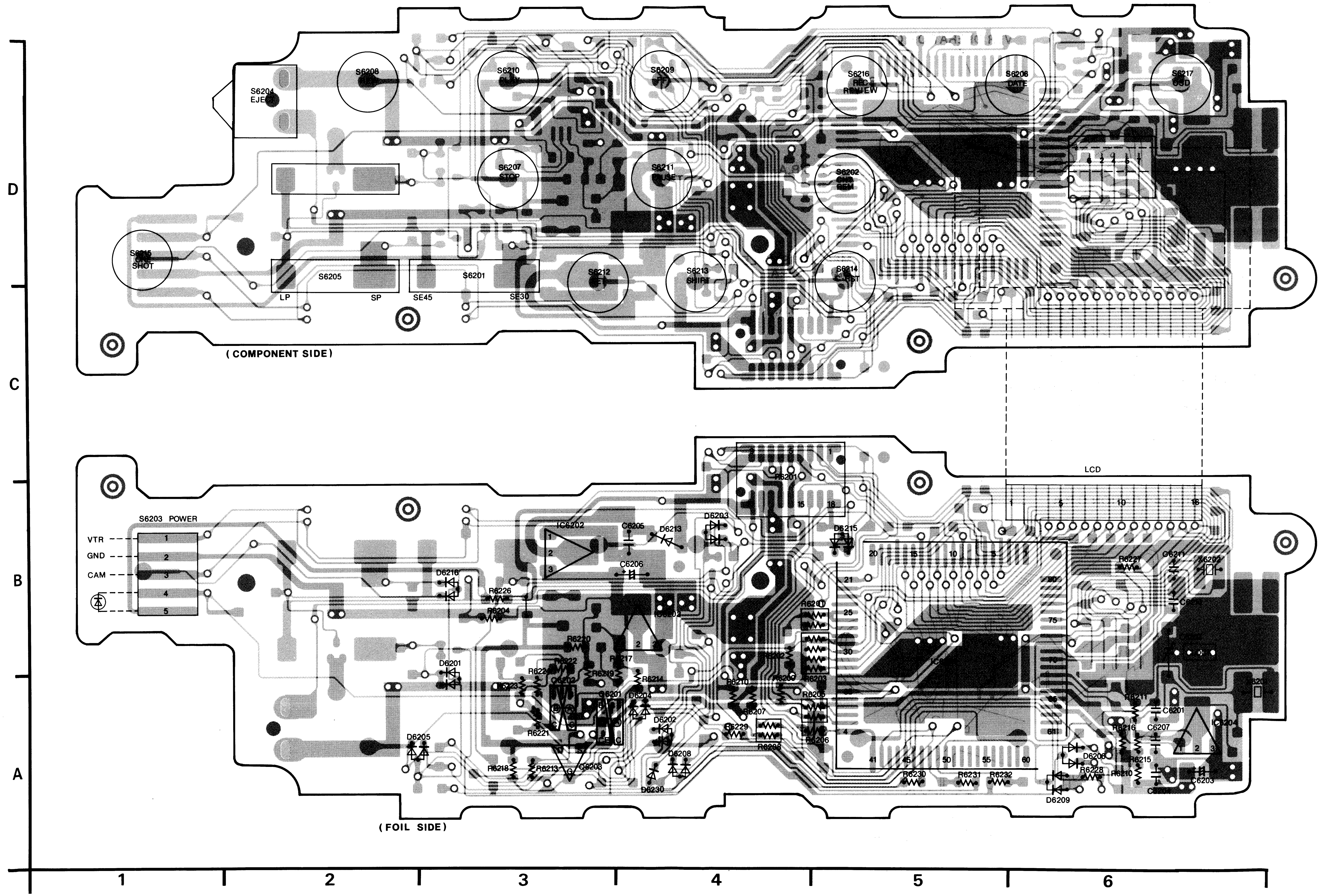
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
S6203 POWER
S6204 EJECT
S6205 SP/LP
S6206 DATE
S6207 STOP
S6208 REW
S6209 FF
S6210 PLAY
S6211 PAUSE
S6212 SET
S6213 SHIFT
S6214 C-RST
S6215 ONE SHOT REC
VTR
OFF
CAM
LP
SP
S6202 CNT/REM
S6201 SE30/SE45
SE45
SE30
D6201 MA132WA
D6202 MA132WA
D6203 MA132WA
D6204 MA132WA
D6205 MA132WA
D6206 MA132WA
D6208 MA132WA
D6216 MA132WA
S6217 OSD ON/OFF
S6216 REC REVIEW
D6215 MA132WA
R6226 470
P6201
EJECT SW
LCD SCK
DISP SYNC
CG STROBE
SYS REG 5V
SYNC DET
GND
CAM/VTR
TEST MODE Ⓛ
TEST CLOCK
3V
GND
LI BATT
UNREG
S-REEL FG
SBIO
LCD POWER ON
POWER SW
LCD
SEG 0
SEG 1
SEG 2
SEG 3
SEG 4
SEG 5
SEG 6
SEG 7
SEG 8
SEG 9
SEG 10
SEG 11
SEG 12
COM 2
COM 1
COM 0
SEGMENT CONTROLS
COM 0
COM 1
COM 2
COM 3
SCAN 0
SCAN 1
SCAN 2
SCAN 3
VSS
SCAN 4
POWER LEDⓁ
LCD POWER ON Ⓛ
LCD CLOCK
SRIO OUT
IN
5V
DISP SYNC
SYNC DED
LI BATT
KEY IN0
KEY IN1
KEY IN2
KEY IN3
LCD CLOCK
IC6201 UPD75328G111
CG STORBE
REEL FG
CAM/VTR
TEST
RESET
X2
X1
XT2
XT1
VDD
R6201 EXBV4V223J
R6 203 EXBV8V224J
R6202 22K
R6204 220K
R6205 EXBV4V102J
R6206 100
R6208 EXBV4V102J
R6229 100
R6230 100
R6231 100
R6232 100
R6209 47K
D6230 MA132K
R6228 10K
D6209 MA132WK
R6207 47K
R6210 47K
X6202 VSX0140
C6211 15P
C6210 15P
R6211 330K
C6202 30P
CLOCK
X6201 VSX0094
VSX0094-AC
ECRKN030G21X
C6201 33P
C6203 6V10
C6204 0.01
R6212 10
R6227 47K
D6213 MA704
IC6204 SB052ALOLGT1
RESET
R6216 100K
C6207 0.1
R6215 3300
C6206 6V10
IC6202 SB1250HGRDT1
5V REG
C6205 0.1
IC6203 SB054ALBLMT1
(BACK-UP Ⓛ)
R6214 100K
R6217 1M
R6213 56K
Q6203 2SK198
Q6201 XP5501 (BACK-UP SELECT)
Q6202 XP1401 (BACK-UP SELECT)
R6218 2.2M
R6219 2.2M
R6220 33K
R6222 22K
R6223 330K
R6224 470K
R6221 100K
COMMON
SEGMNT
ZQON
MR-88.88

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

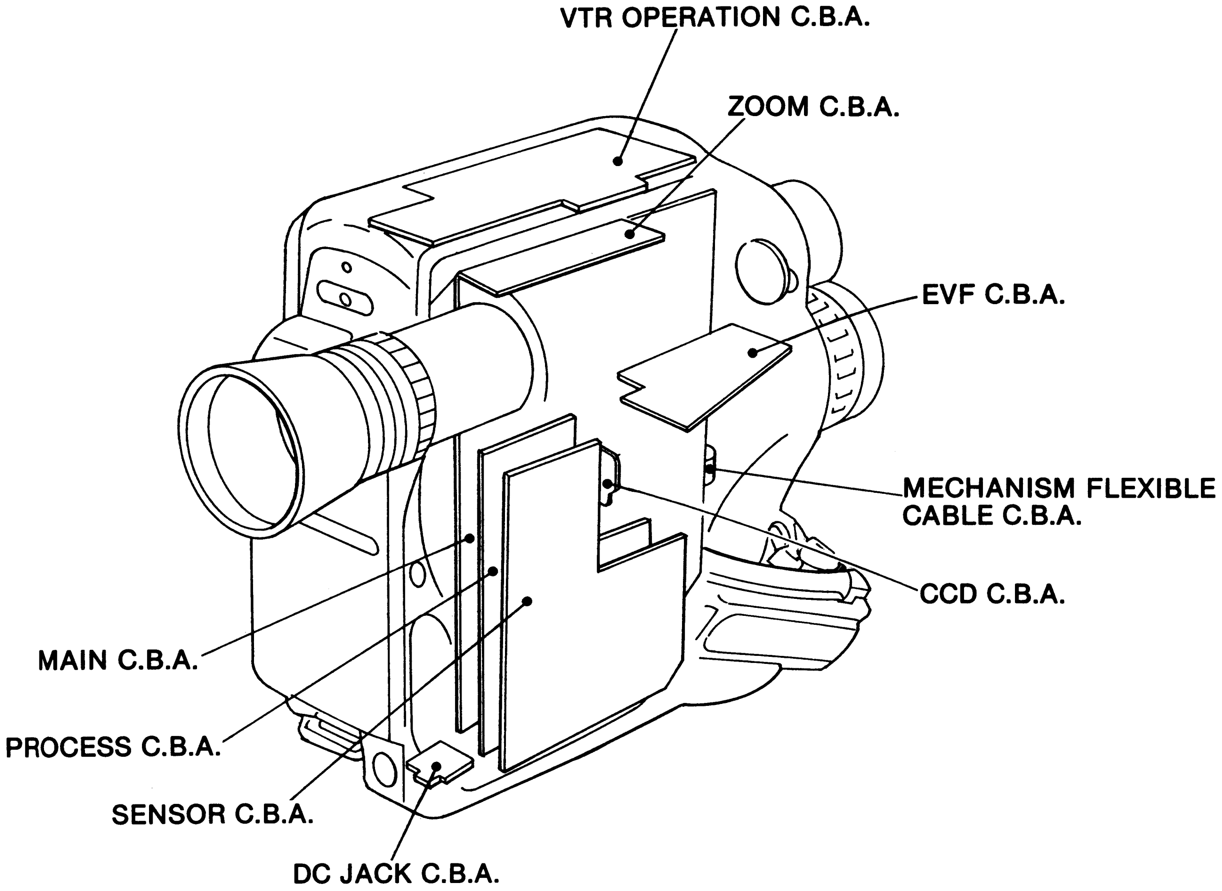
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

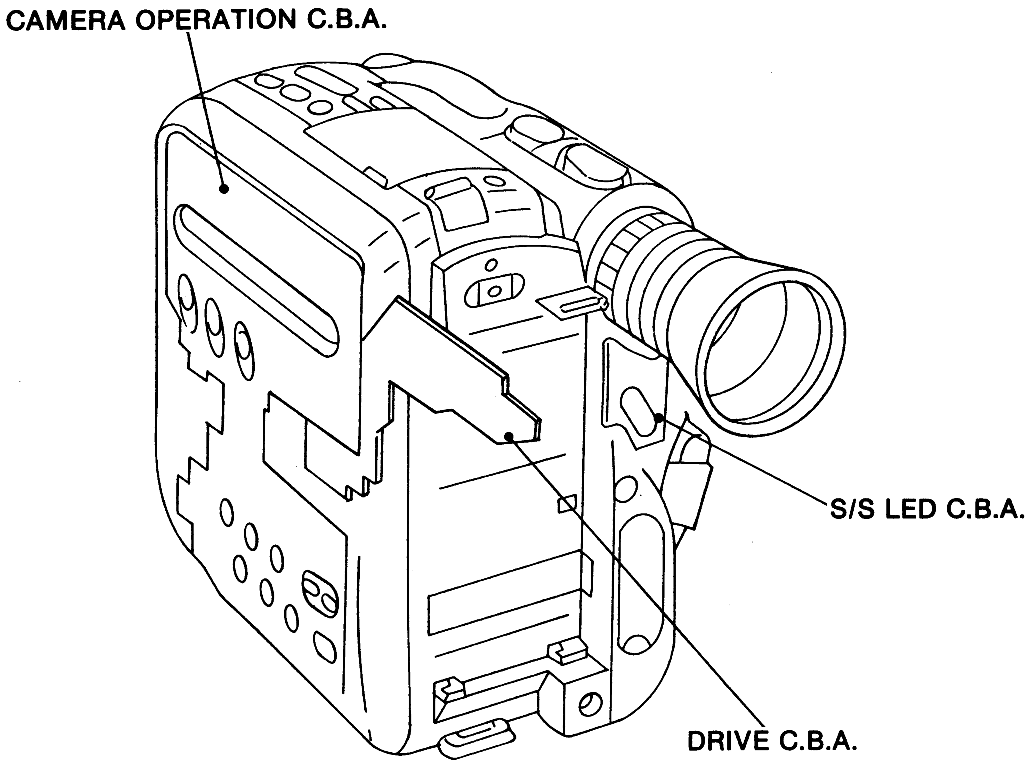
Back Page:
DRIVE Section

3-24. VTR OPERATION C.B.A. (VEP06697B)


S6204 EJECT
S6208
S6210 PLAY
S6209 FF
S6216 REC REVIEW
S6206 DATE
S6217 OSD
S6207 STOP
S6211 PAUSE
S6202
S6215 ONE SHOT
S6205
LP
SP
S6201
SE45
SE30
S6212
S6213 SHIFT
S6214
(COMPONENT SIDE)
LCD
1
5
10
16
S6203 POWER
VTR
GND
CAM
1
2
3
4
5
IC6202
C6205
D6213
D6203
D6215
C6206
D6216
R6226
R6204
R6201
R6220
R6222
R6217
R6219
R6214
D6201
R6224
R6223
Q6202
Q6201
D6204
D6202
R6221
D6205
R6218
R6213
Q6203
D6208
D6230
R6210
R6207
R6209
R6229
R6208
R6206
R6205
R6202
R6230
R6231
R6232
R6227
C6211
X6202
R6211
C6201
C6207
IC6204
R6216
R6215
D6206
D6209
R6228
C6203
(FOIL SIDE)
D
C
B
A
1
2
3
4
5
6

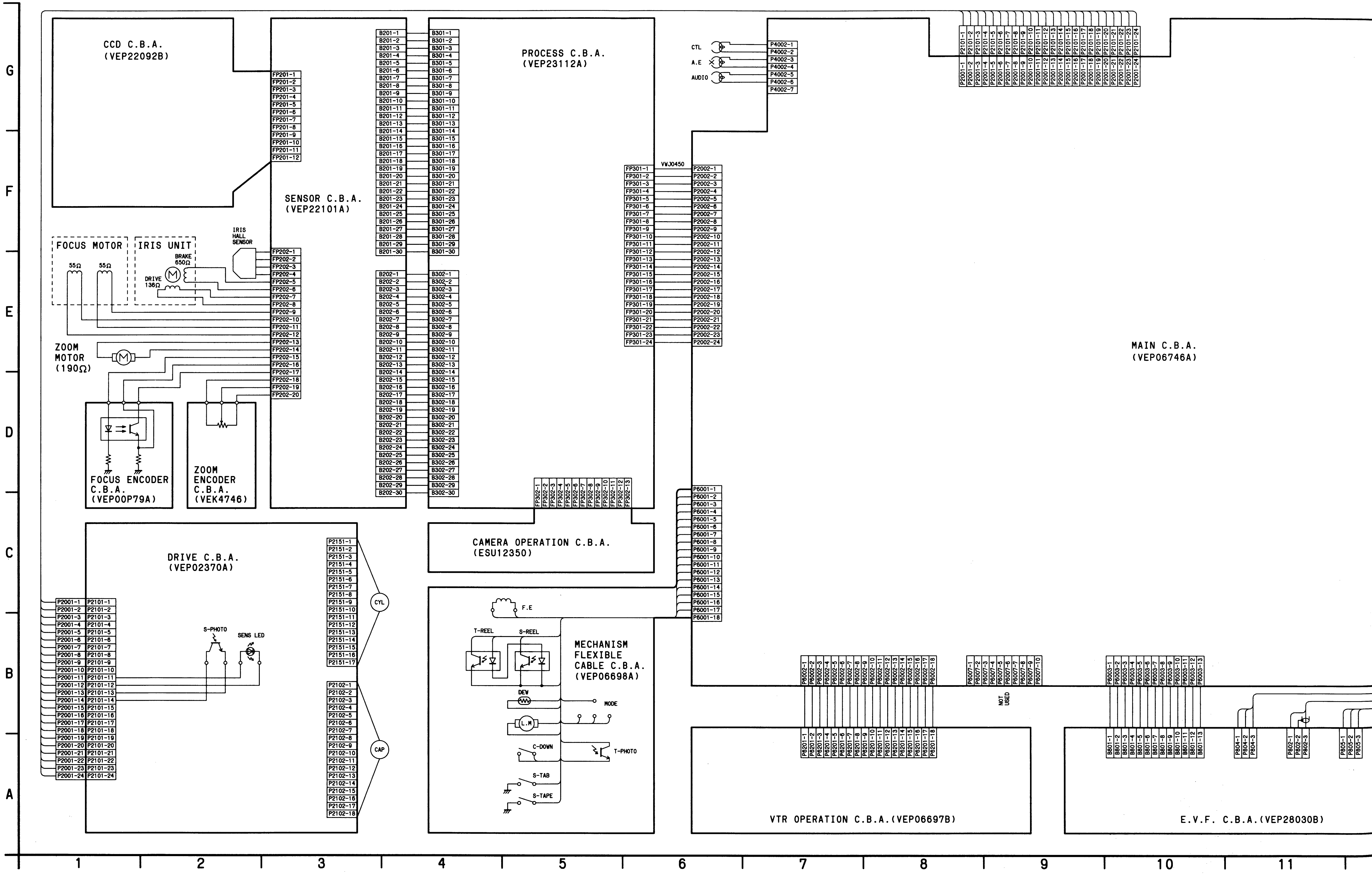
3-27. CIRCUIT BOARD LAYOUT

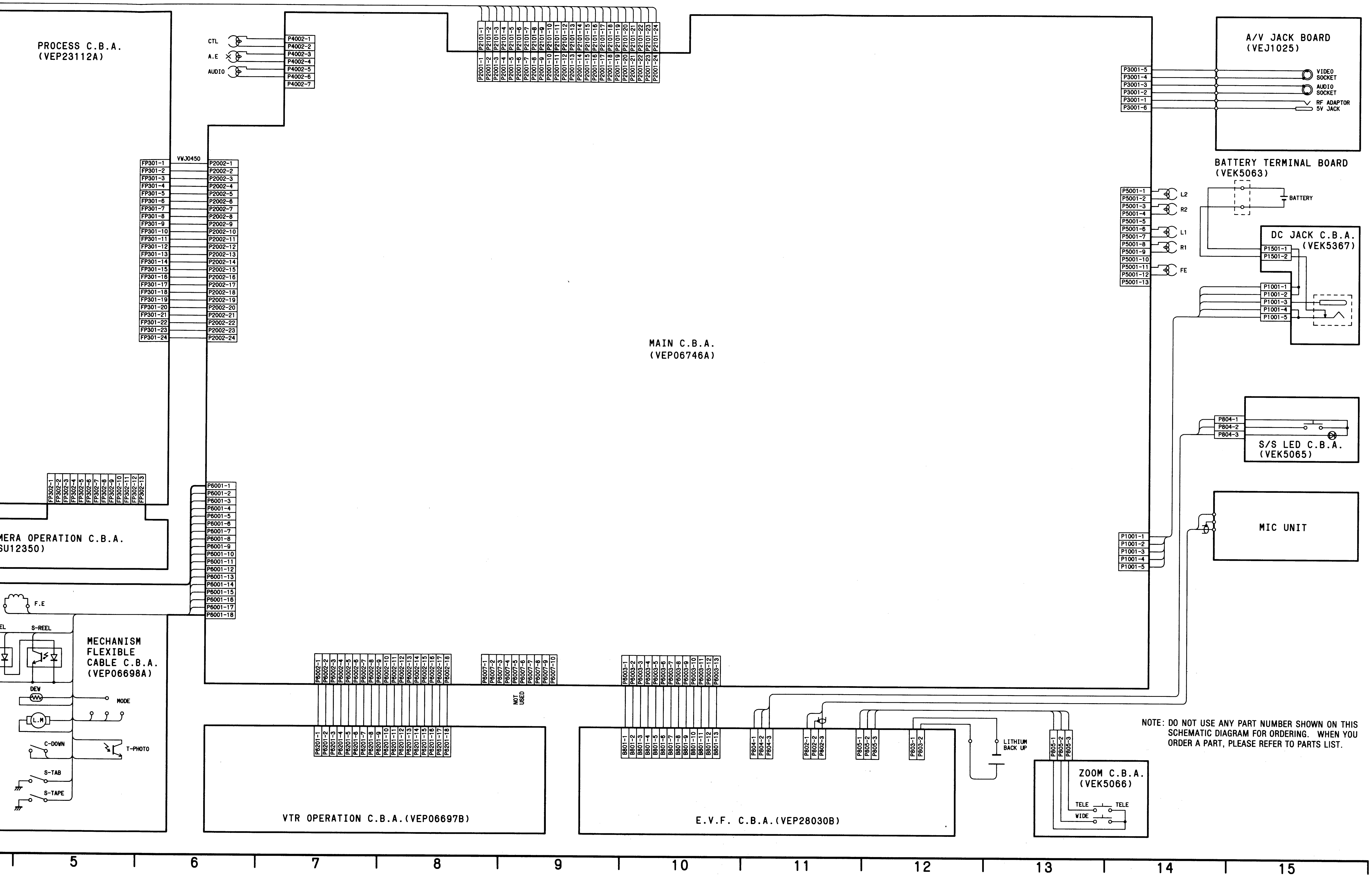

VTR OPERATION C.B.A.
ZOOM C.B.A.
EVF C.B.A.
MECHANISM FLEXIBLE CABLE C.B.A.
CCD C.B.A.
MAIN C.B.A.
PROCESS C.B.A.
SENSOR C.B.A.
DC JACK C.B.A.


CAMERA OPERATION C.B.A.
S/S LED C.B.A.
DRIVE C.B.A.

Memo

3-28. INTERCONNECTION SCHEMATIC DIAGRAM

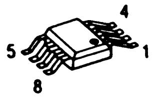

CCD C.B.A.
(VEP22092B)
SENSOR C.B.A.
(VEP22101A)
PROCESS C.B.A.
(VEP23112A)
MAIN C.B.A.
(VEP06746A)
FOCUS MOTOR
IRIS UNIT
55Ω
55Ω
BRAKE
650Ω
DRIVE
136Ω
IRIS HALL SENSOR
ZOOM MOTOR (190Ω)
FOCUS ENCODER C.B.A. (VEP00P79A)
ZOOM ENCODER C.B.A. (VEK4746)
DRIVE C.B.A.
(VEP02370A)
S-PHOTO
SENS LED
CYL
CAP
CAMERA OPERATION C.B.A.
(ESU12350)
MECHANISM FLEXIBLE CABLE C.B.A.
(VEP06698A)
F.E
T-REEL
S-REEL
DEW
MODE
L.M
C-DOWN
T-PHOTO
S-TAB
S-TAPE
CTL
A.E
AUDIO
VWJ0450
NOT USED
VTR OPERATION C.B.A.(VEP06697B)
E.V.F. C.B.A.(VEP28030B)
FP201-1 – FP201-12
FP202-1 – FP202-20
B201-1 – B201-30
B301-1 – B301-30
B202-1 – B202-30
B302-1 – B302-30
FP301-1 – FP301-24
P2002-1 – P2002-24
FP302-1 – FP302-13
P4002-1 – P4002-7
P2101-1 – P2101-24
P2001-1 – P2001-24
P6001-1 – P6001-18
P2151-1 – P2151-17
P2102-1 – P2102-18
P6002-1 – P6002-18
P6201-1 – P6201-18
P6007-1 – P6007-10
P6003-1 – P6003-13
B801-1 – B801-13
P804-1 P804-2 P804-3
P802-1 P802-2 P802-3
P805-1 P805-2 P805-3
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11


PROCESS C.B.A.
(VEP23112A)
CTL
A.E
AUDIO
P4002-1 … P4002-7
P2101-1 … P2101-24
P2001-1 … P2001-24
VWJ0450
FP301-1 … FP301-24
P2002-1 … P2002-24
FP302-1 … FP302-13
MERA OPERATION C.B.A.
SU12350)
P6001-1 … P6001-18
F.E
S-REEL
MECHANISM
FLEXIBLE
CABLE C.B.A.
(VEP06698A)
DEW
MODE
L.M
C-DOWN
T-PHOTO
S-TAB
S-TAPE
MAIN C.B.A.
(VEP06746A)
P6002-1 … P6002-18
P6007-1 … P6007-10
NOT USED
P6201-1 … P6201-18
VTR OPERATION C.B.A.(VEP06697B)
P6003-1 … P6003-13
B801-1 … B801-13
P804-1
P804-2
P804-3
P802-1
P802-2
P802-3
P805-1
P805-2
P805-3
P803-1
P803-2
LITHIUM
BACK UP
E.V.F. C.B.A.(VEP28030B)
ZOOM C.B.A.
(VEK5066)
TELE
TELE
WIDE
A/V JACK BOARD
(VEJ1025)
P3001-5
P3001-4
P3001-3
P3001-2
P3001-1
P3001-6
VIDEO SOCKET
AUDIO SOCKET
RF ADAPTOR
5V JACK
BATTERY TERMINAL BOARD
(VEK5063)
BATTERY
P5001-1 … P5001-13
L2
R2
L1
R1
FE
DC JACK C.B.A.
(VEK5367)
P1501-1
P1501-2
P1001-1
P1001-2
P1001-3
P1001-4
P1001-5
S/S LED C.B.A.
(VEK5065)
MIC UNIT
5
6
7
8
9
10
11
12
13
14
15

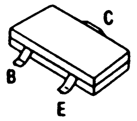
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

Next Page:
ICs & TRs INFORMATION Section

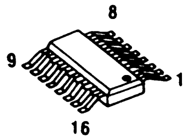
3-29. ICs & TRs INFORMATION



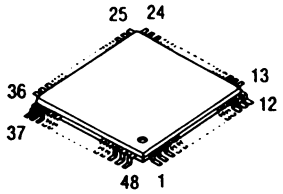
LM358DB
LM393DB
LM311DB
AN6663S
TL8809F
LM393DB



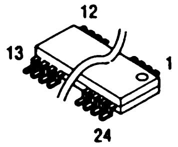
2SA1610 2SB1462
2SA1532 2SB1463
2SB970X 2SC4626
2SB1218 28A812
2SB1219 2SC4176
2SD968A 2SD602
2SD1328 2SC4627
2SD2216 2SA1790
2SC4627 2SC3938



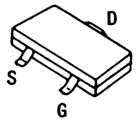
AN2012SB
TDM3702
AN2514S
μPD16501GS


25 24
36
13
12
37
48 1

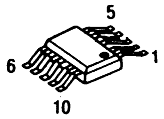
MN73512XWAS
M65701FHP



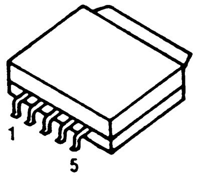
CXD1175AM
BA9702FS



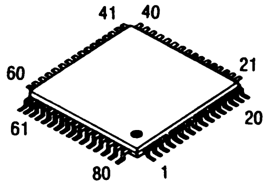
2SK198



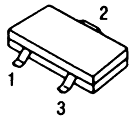
M6M80021FP
M54543AFP



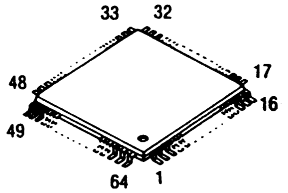
AN6545SP


41 40
60
21
61
20
80 1

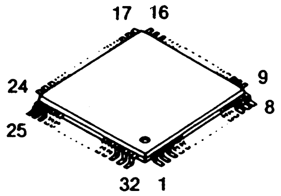
MN67512VLFA1
μPD75328GC
MN67801VCX
MN188166VZUA
MN6731FHP
MN6730FHP
M188166VZVA



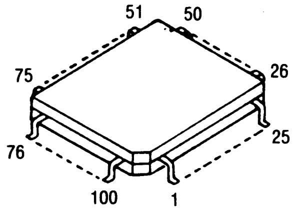
S8054ALBLM
S8052ANBNE
S81250HGRD
S8052AL0LG


33 32
48
17
16
49
64 1

AN2465FHP
MN73039VSMS
MN5145FHP
μPD75108A584


17 16
24
9
8
25
32 1

BA7757BK
MN1551VFMA
AN2015FAP
AN2585FAP
MN1551VUSA
AN2355FAP


51 50
75
26
76
25
100 1

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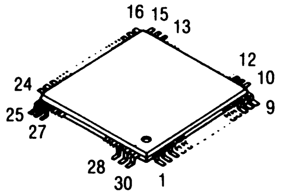
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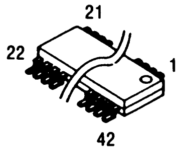

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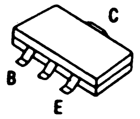

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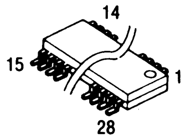

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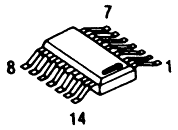

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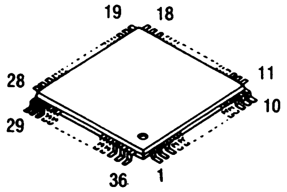
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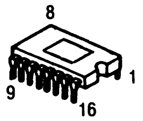

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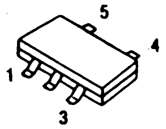

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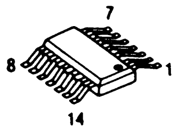

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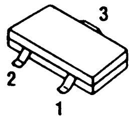

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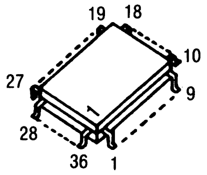
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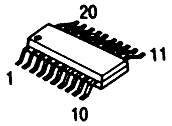

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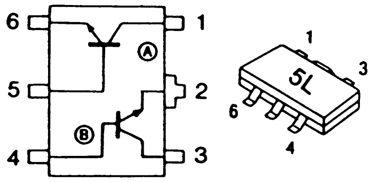
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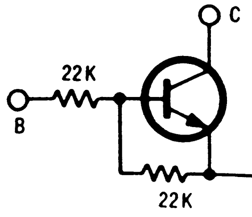

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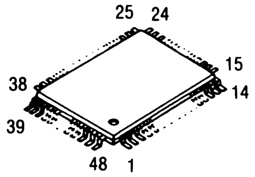
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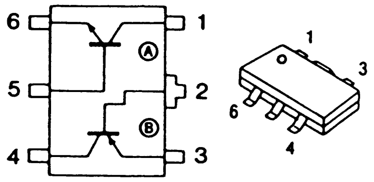
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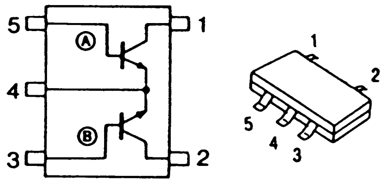
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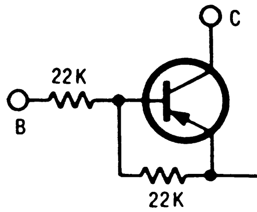

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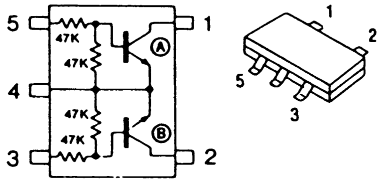
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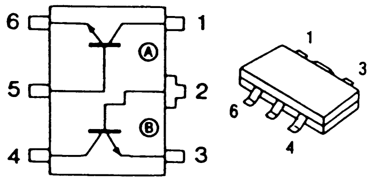
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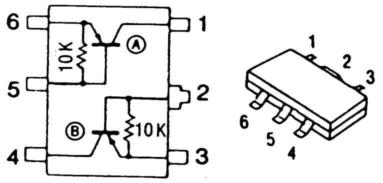
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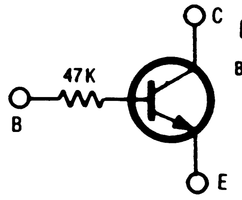

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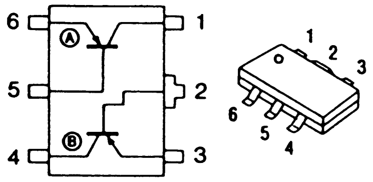
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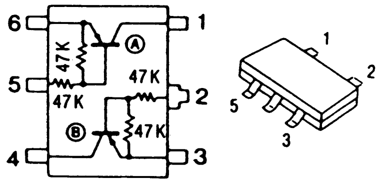
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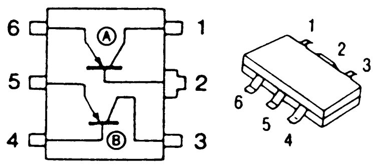
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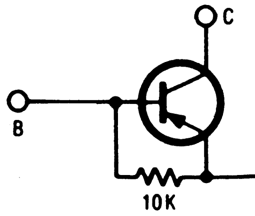

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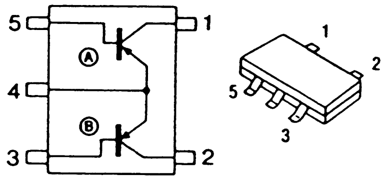

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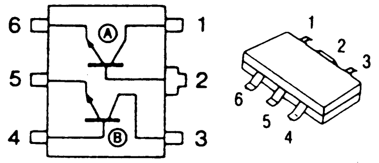
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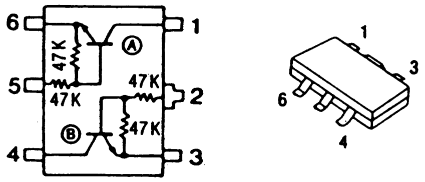
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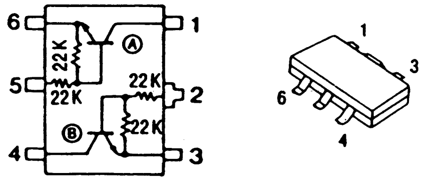
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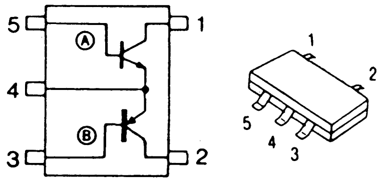
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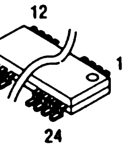

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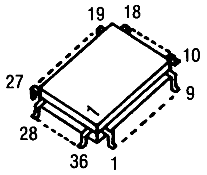
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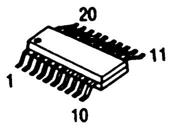

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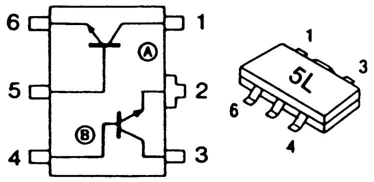
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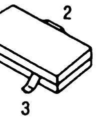

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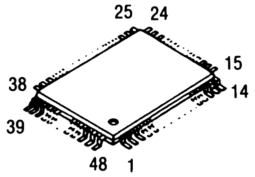
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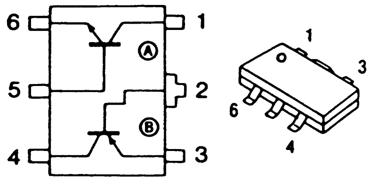
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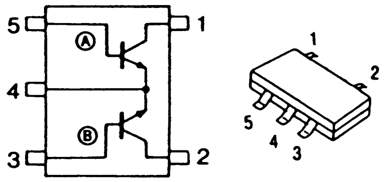
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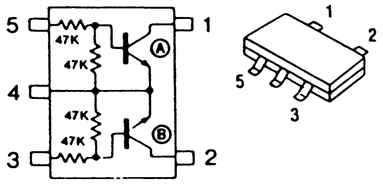
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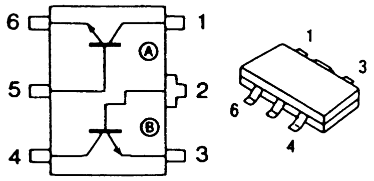
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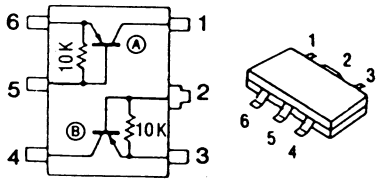
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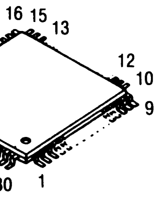
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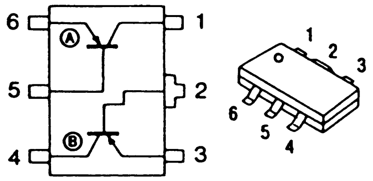
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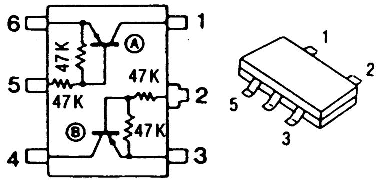
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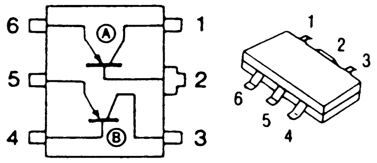
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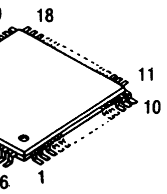

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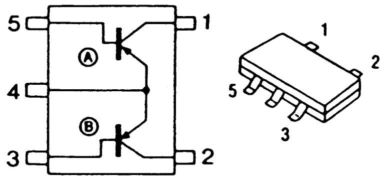

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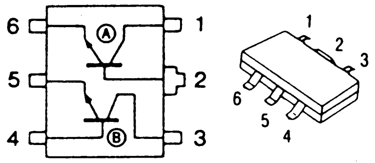
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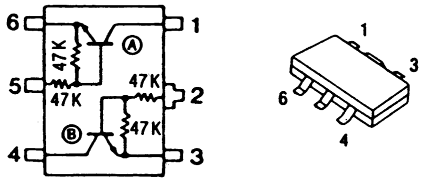
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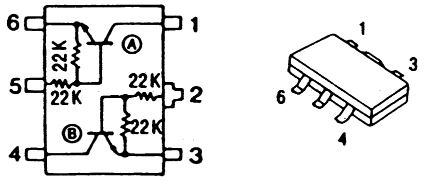
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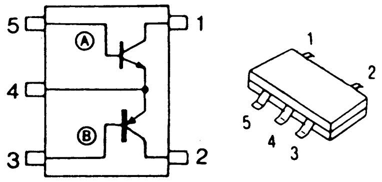
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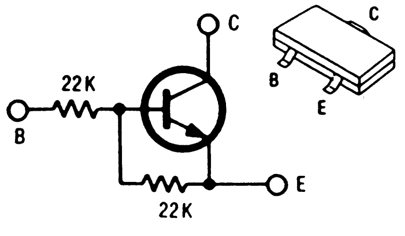
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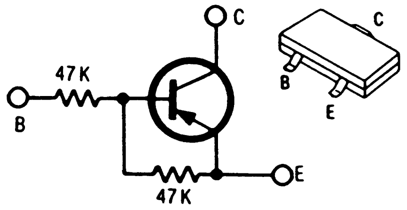
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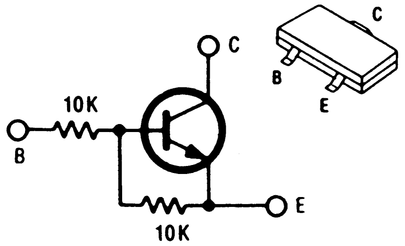
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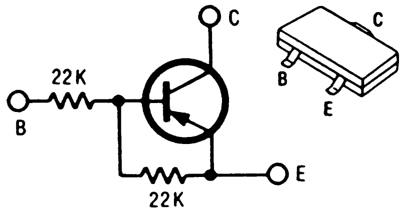
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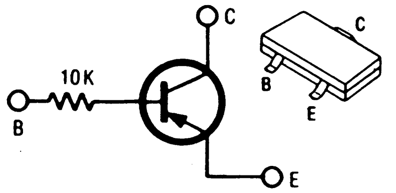
UN9112



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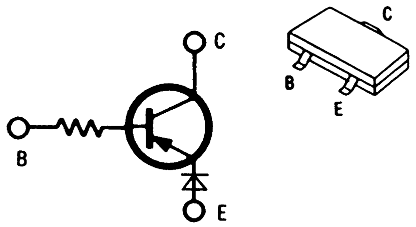

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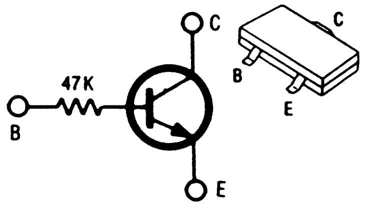

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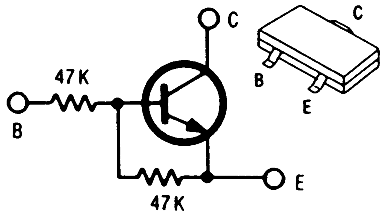
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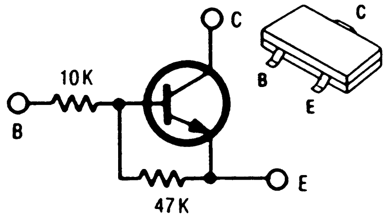
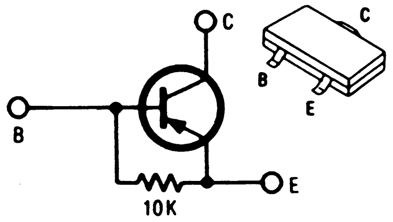
E

UN9213


C
10K
B
47K
E
C
B
E

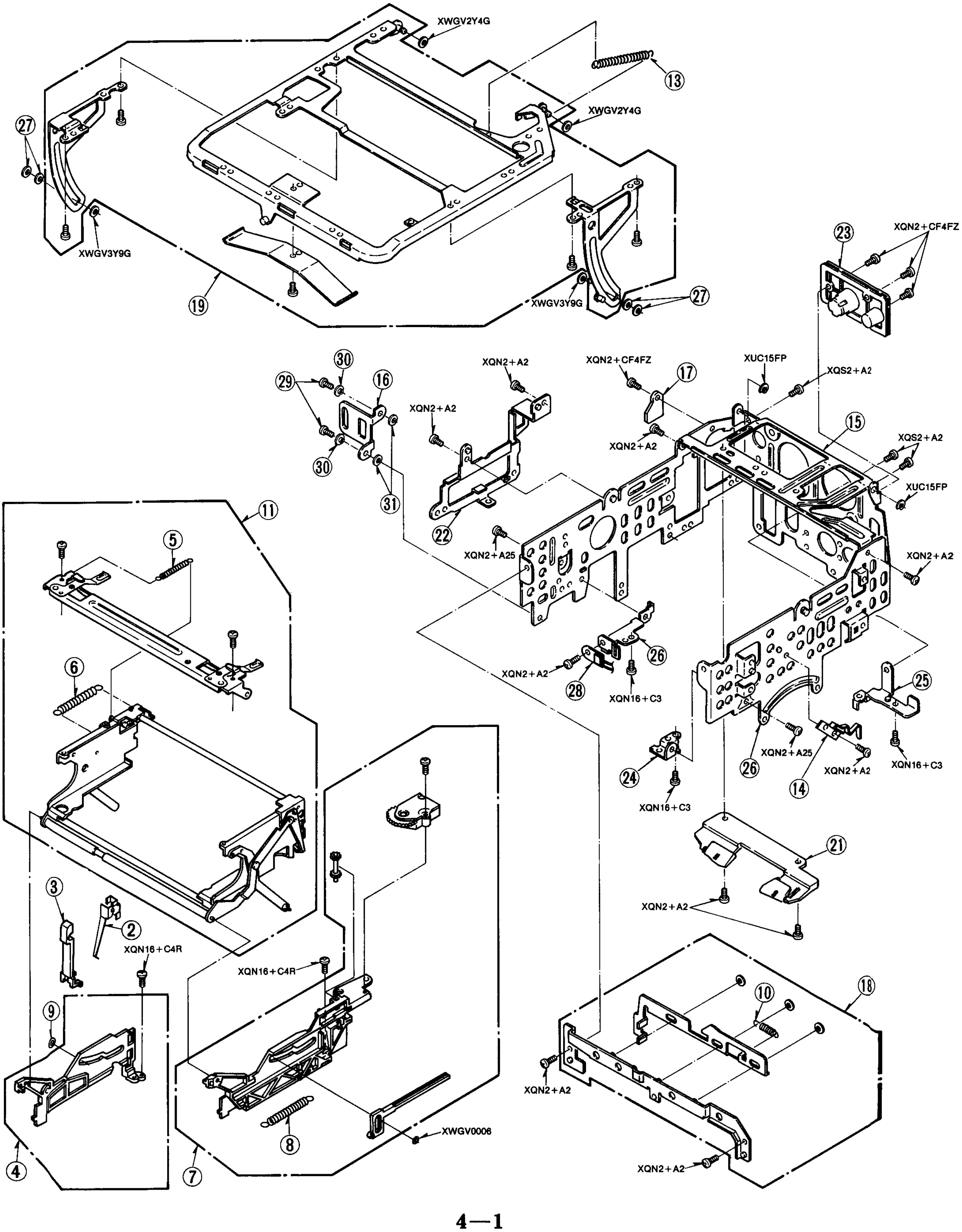
UN9214



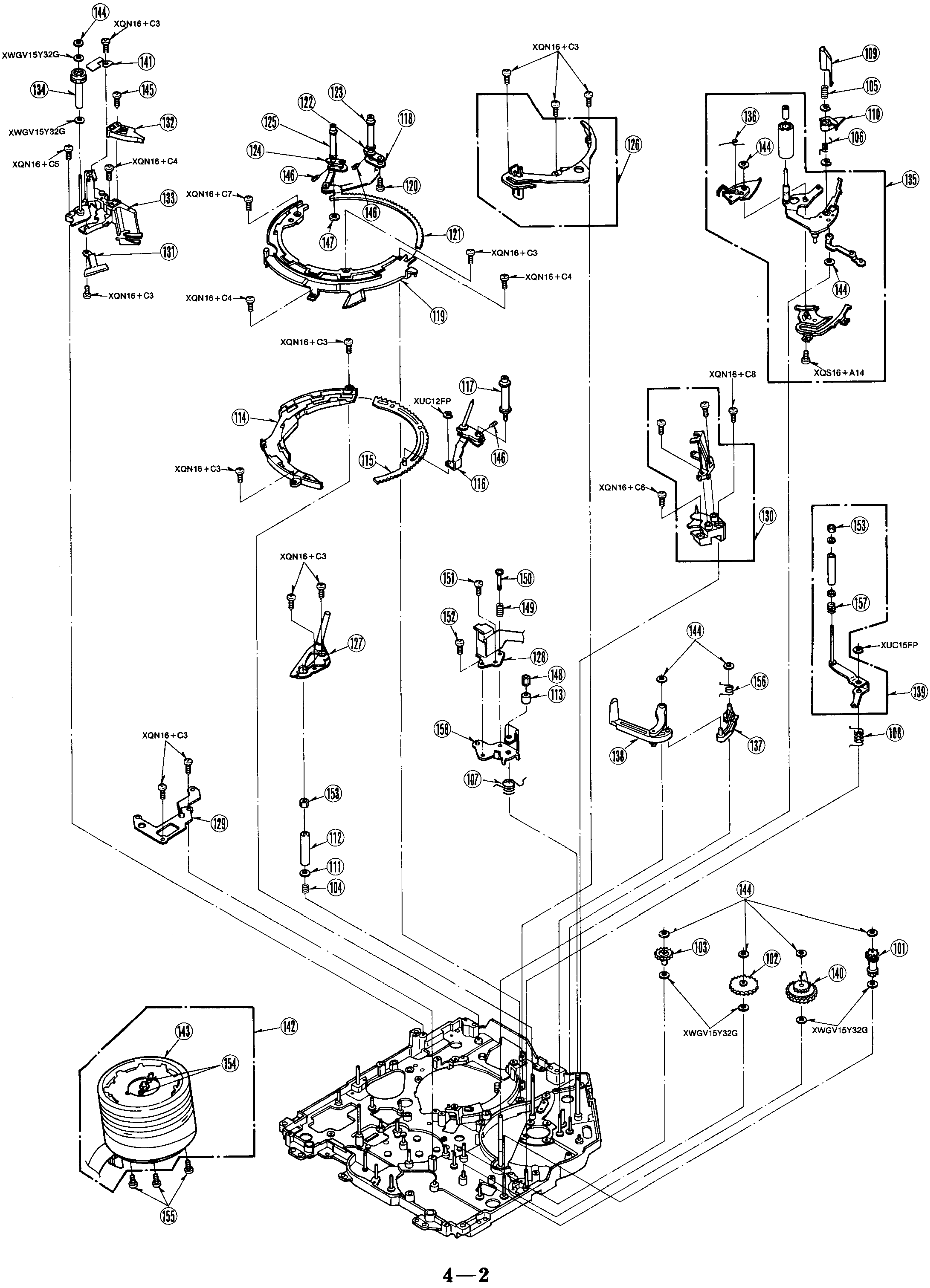
UN2130X

SECTION 4
EXPLODED VIEWS & PARTS LIST

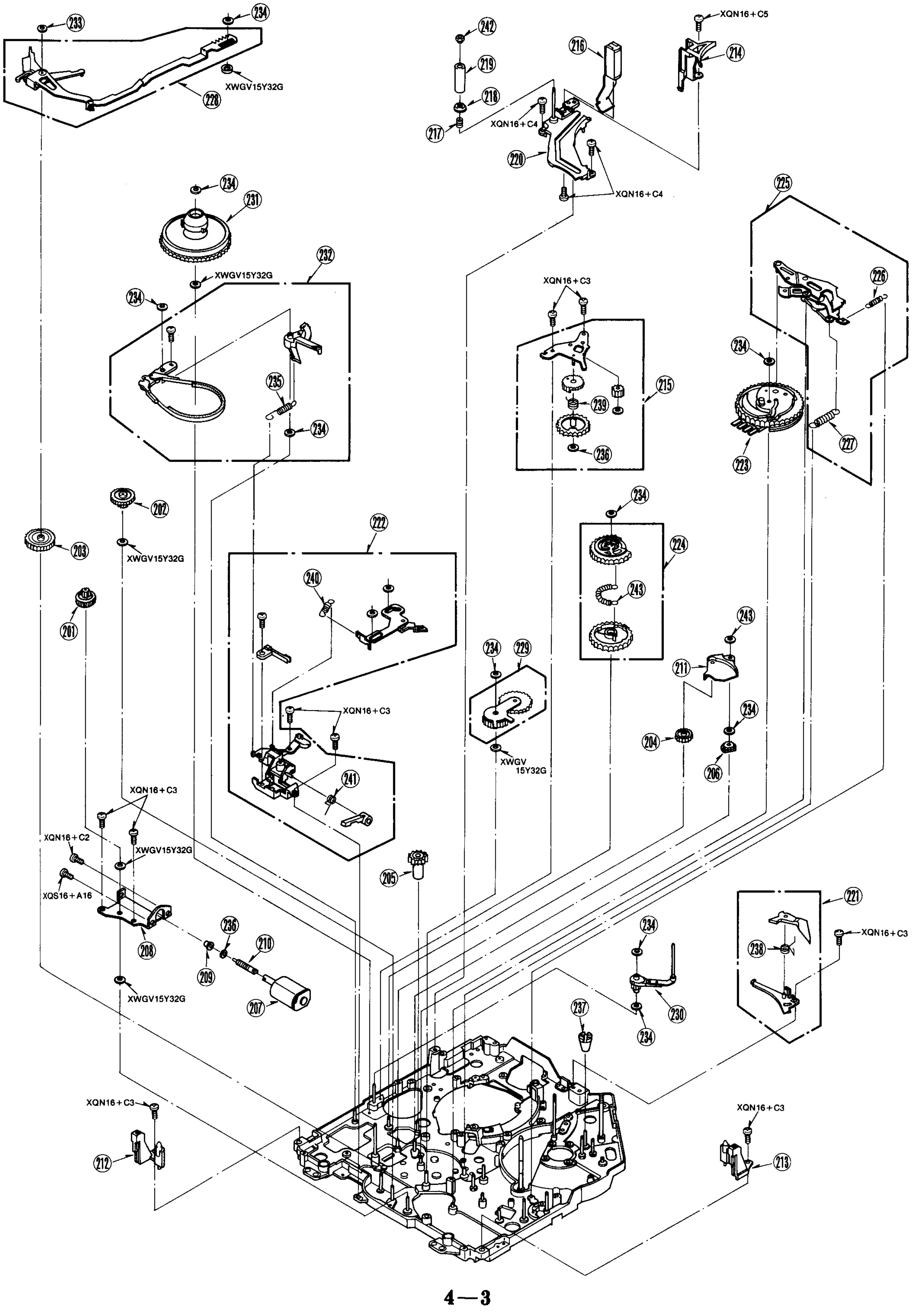
4-1. EXPLODED VIEW ❶ VTR MECHANISM SECTION (1)


XWGV2Y4G
⑬
XWGV2Y4G
㉗
XWGV3Y9G
⑲
XWGV3Y9G
㉗
㉓
XQN2+CF4FZ
㉚
⑯
㉙
㉚
㉛
XQN2+A2
XQN2+A2
XQN2+CF4FZ
⑰
XQN2+A2
XUC15FP
XQS2+A2
⑮
XQS2+A2
XUC15FP
㉒
XQN2+A25
XQN2+A2
⑪
⑤
⑥
㉖
XQN2+A2
㉘
XQN16+C3
㉕
㉔
XQN16+C3
XQN2+A25
㉖
⑭
XQN2+A2
XQN16+C3
㉑
XQN2+A2
③
②
XQN16+C4R
XQN16+C4R
⑨
⑩
⑱
XQN2+A2
⑧
XWGV0006
④
⑦
XQN2+A2

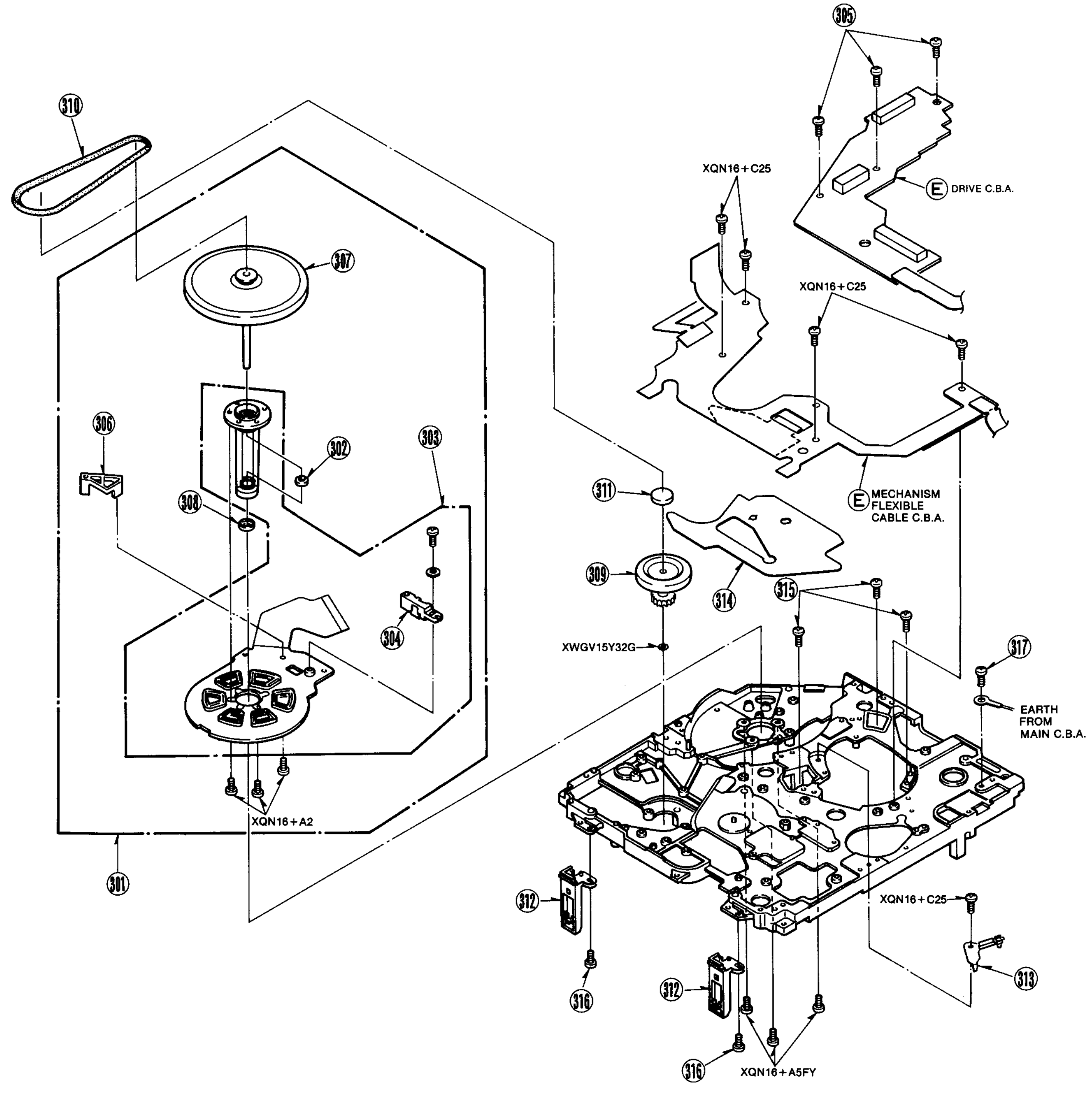
❷ VTR MECHANISM SECTION (2)


144
XQN16+C3
XWGV15Y32G
141
134
145
XWGV15Y32G
132
XQN16+C5
XQN16+C4
133
131
XQN16+C3
123
122
118
125
124
146
120
XQN16+C7
146
147
121
XQN16+C3
XQN16+C4
XQN16+C4
119
XQN16+C3
126
109
105
110
106
136
144
135
144
XQS16+A14
XQN16+C3
117
XUC12FP
114
146
115
116
XQN16+C3
XQN16+C8
XQN16+C6
130
153
XQN16+C3
151
150
149
157
127
152
128
XUC15FP
148
113
144
156
139
158
138
137
108
107
XQN16+C3
153
129
112
111
104
144
103
102
101
140
142
143
154
XWGV15Y32G
XWGV15Y32G
155

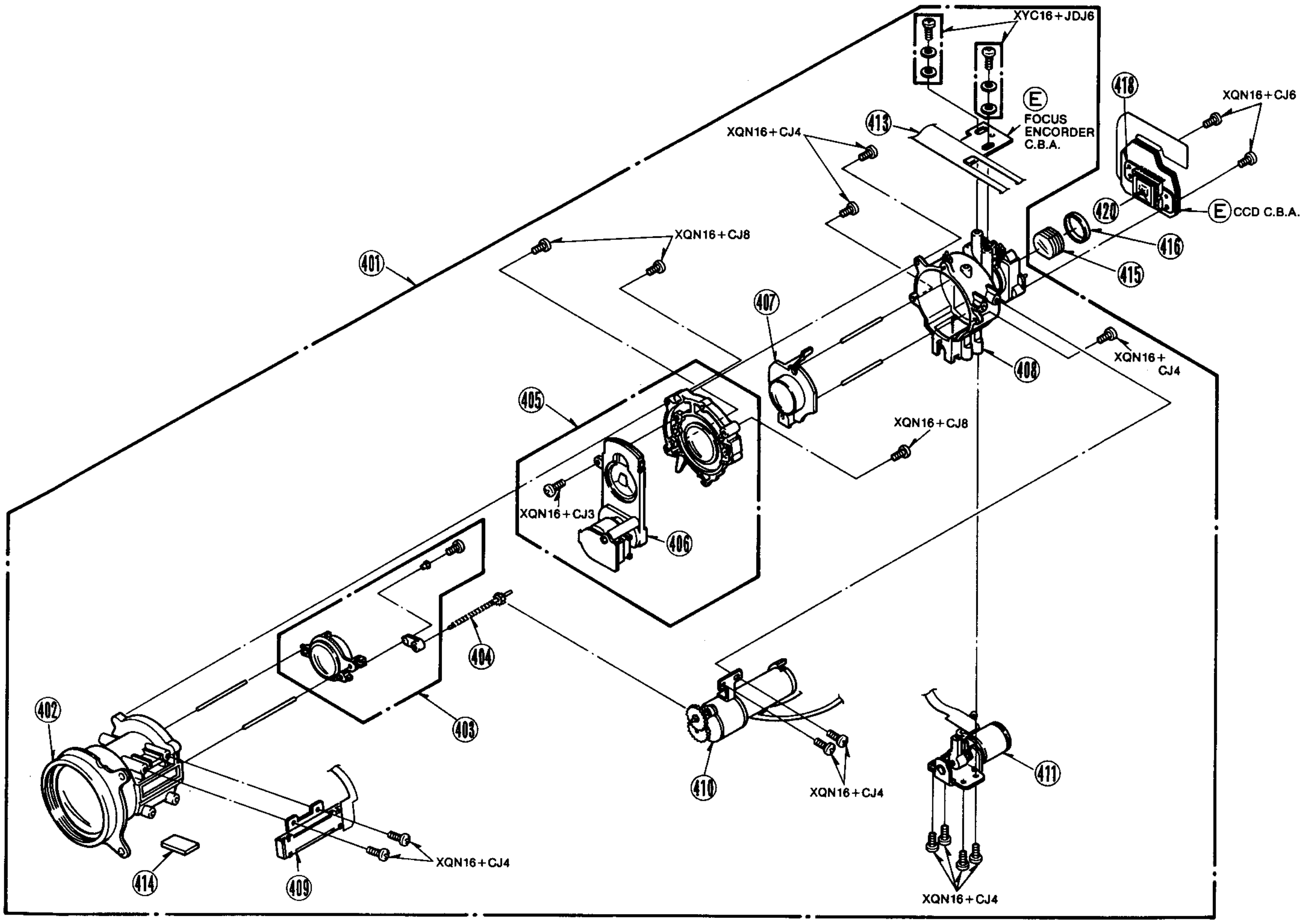
❸ VTR MECHANISM SECTION (3)


233
234
XWGV15Y32G
228
242
219
218
217
XQN16+C4
216
XQN16+C5
214
220
XQN16+C4
234
231
225
232
XWGV15Y32G
234
226
XQN16+C3
235
234
234
215
239
236
223
227
202
203
XWGV15Y32G
222
234
224
240
243
201
234
229
243
211
XQN16+C3
204
234
206
XWGV
15Y32G
241
XQN16+C3
XQN16+C2
XWGV15Y32G
XQS16+A16
205
221
208
236
210
234
XQN16+C3
238
209
207
XWGV15Y32G
237
230
234
XQN16+C3
XQN16+C3
212
213

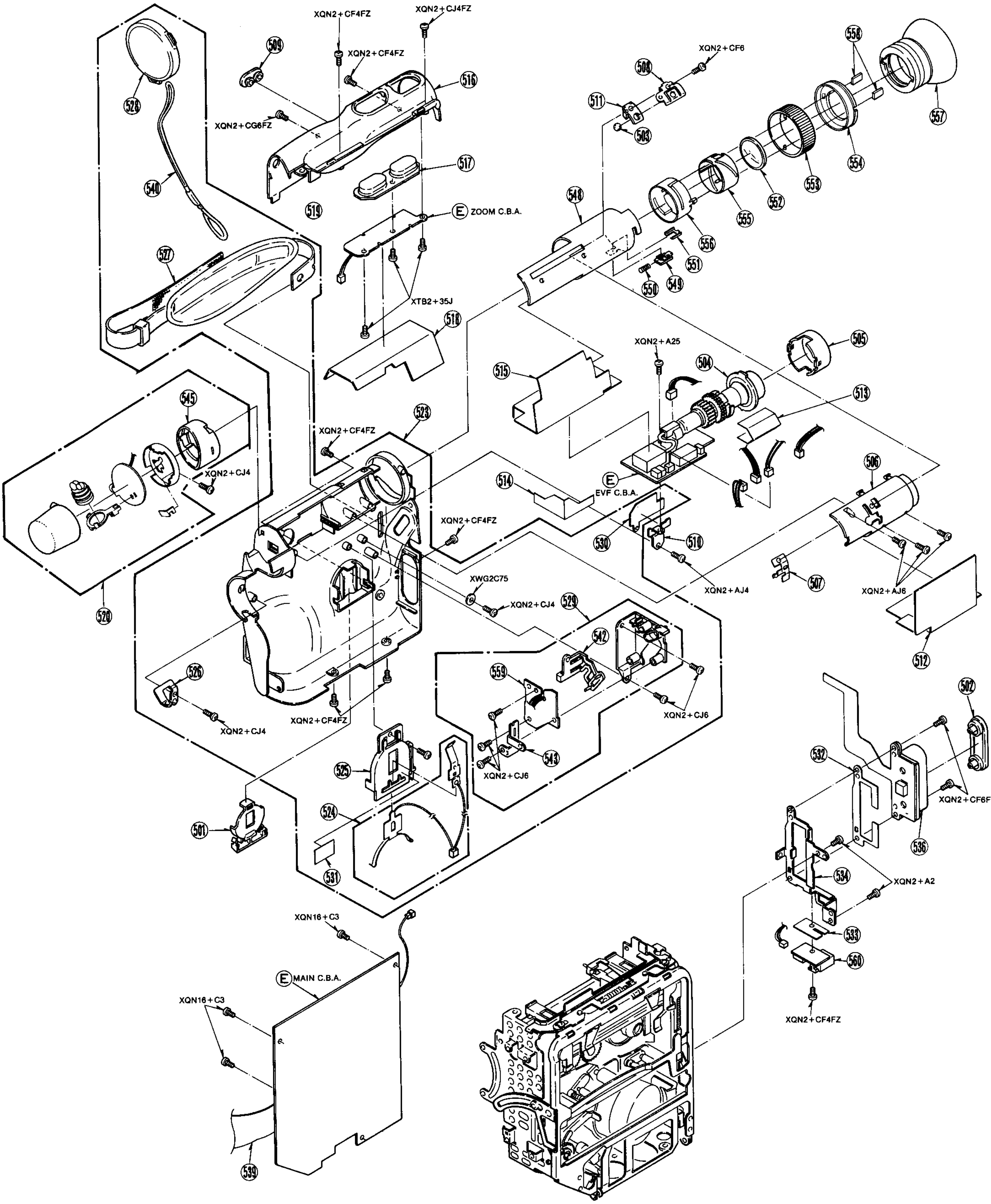
❹ VTR MECHANISM SECTION (4)


305
310
XQN16+C25
307
DRIVE C.B.A.
E
XQN16+C25
306
302
303
308
311
E MECHANISM FLEXIBLE CABLE C.B.A.
309
314
315
304
XWGV15Y32G
317
EARTH FROM MAIN C.B.A.
XQN16+A2
301
312
XQN16+C25
316
312
313
316
XQN16+A5FY

❺ CAMERA LENS SECTION

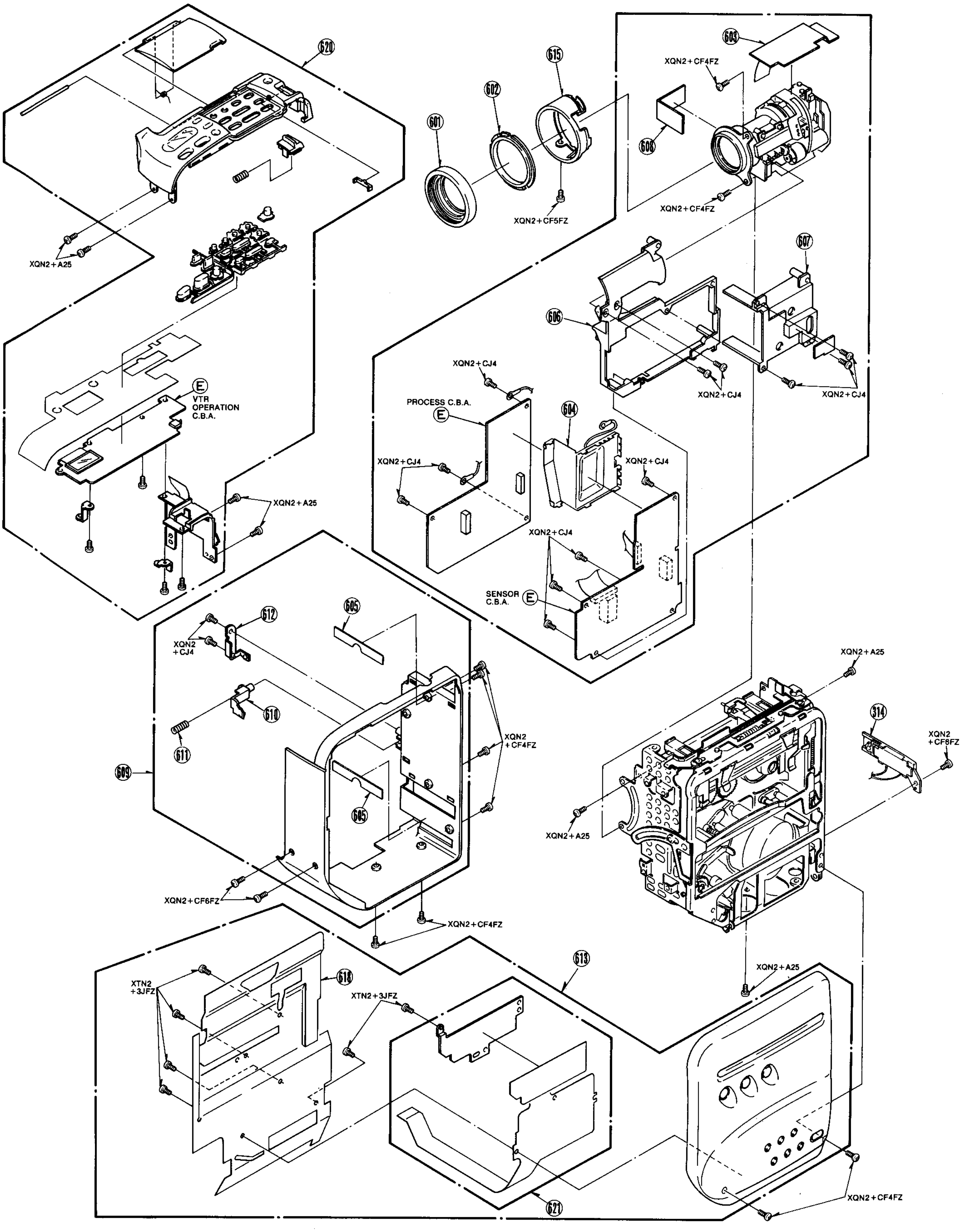

XYC16+JDJ6
E
FOCUS
ENCORDER
C.B.A.
418
XQN16+CJ6
XQN16+CJ4
413
420
E CCD C.B.A.
416
415
XQN16+CJ8
401
407
408
XQN16+
CJ4
405
XQN16+CJ8
XQN16+CJ3
406
404
402
403
410
XQN16+CJ4
411
414
409
XQN16+CJ4
XQN16+CJ4

❻ FRAME & CASING PARTS SECTION (1)



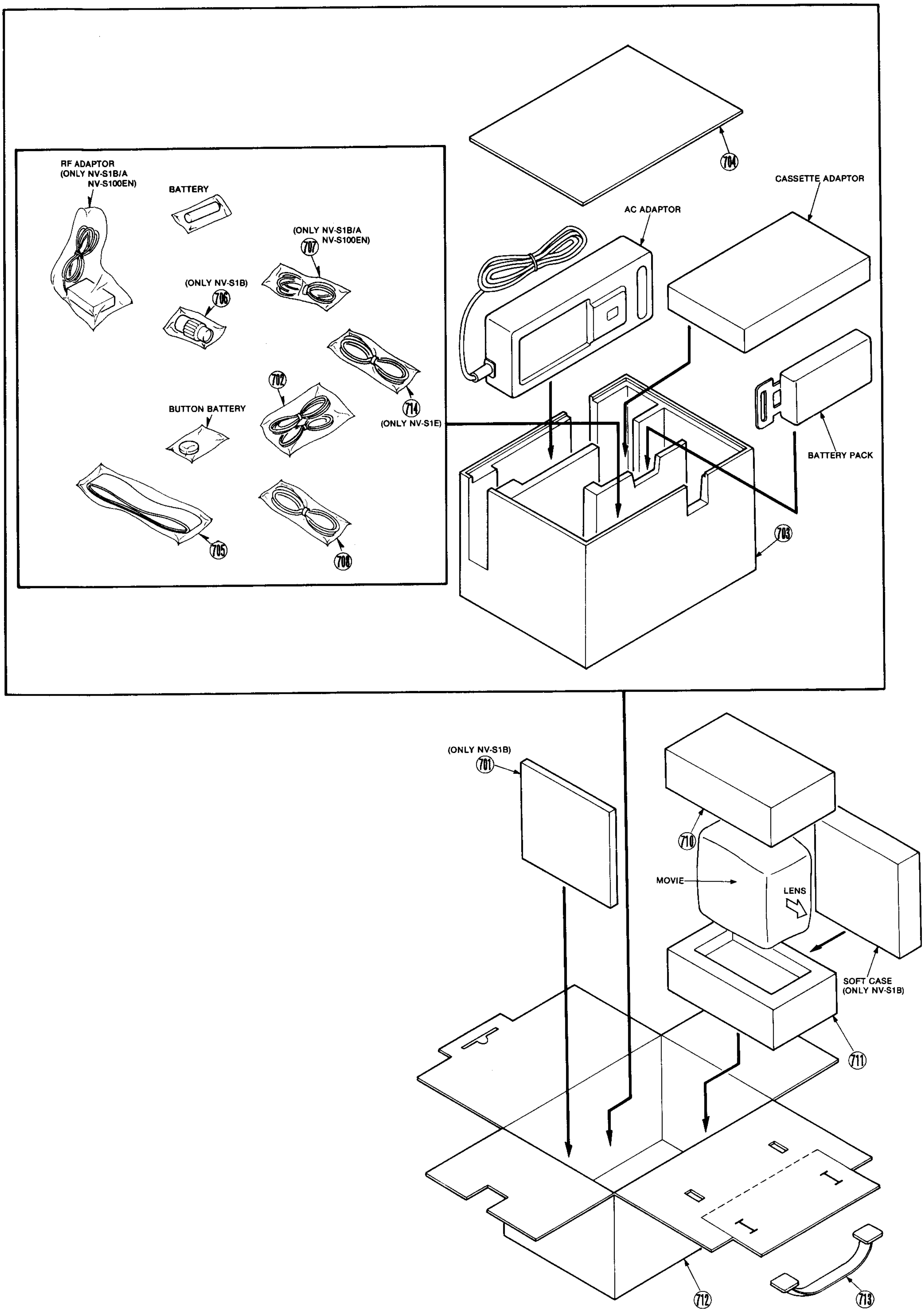
XQN2+CF4FZ
XQN2+CJ4FZ
509
XQN2+CF4FZ
516
528
XQN2+CG6FZ
517
540
519
E ZOOM C.B.A.
527
XTB2+35J
518
XQN2+CF6
508
511
503
558
557
554
553
552
555
556
548
551
549
550
XQN2+A25
504
505
513
515
545
XQN2+CJ4
520
523
XQN2+CF4FZ
514
E EVF C.B.A.
530
510
XQN2+AJ4
506
507
XQN2+AJ6
512
XWG2C75
XQN2+CJ4
529
542
559
XQN2+CJ6
543
XQN2+CJ6
526
XQN2+CJ4
XQN2+CF4FZ
525
524
531
501
502
532
XQN2+CF6FZ
536
534
XQN2+A2
533
560
XQN2+CF4FZ
XQN16+C3
E MAIN C.B.A.
XQN16+C3
539

❼ FRAME & CASING PARTS SECTION (2)



620
XQN2+A25
E
VTR OPERATION C.B.A.
XQN2+A25
601
602
615
XQN2+CF5FZ
603
XQN2+CF4FZ
608
XQN2+CF4FZ
607
606
XQN2+CJ4
XQN2+CJ4
XQN2+CJ4
PROCESS C.B.A.
E
XQN2+CJ4
604
XQN2+CJ4
XQN2+CJ4
SENSOR C.B.A.
E
605
612
XQN2 +CJ4
610
611
609
XQN2 +CF4FZ
605
XQN2+CF6FZ
XQN2+CF4FZ
XQN2+A25
314
XQN2 +CF6FZ
XQN2+A25
613
618
XTN2 +3JFZ
XTN2+3JFZ
XQN2+A25
621
XQN2+CF4FZ

⑧ PACKING PARTS & ACCESSORIES SECTION


RF ADAPTOR
(ONLY NV-S1B/A
NV-S100EN)
BATTERY
(ONLY NV-S1B/A
NV-S100EN)
707
(ONLY NV-S1B)
706
702
714
(ONLY NV-S1E)
BUTTON BATTERY
705
708
704
CASSETTE ADAPTOR
AC ADAPTOR
BATTERY PACK
703
(ONLY NV-S1B)
701
710
MOVIE
LENS
SOFT CASE
(ONLY NV-S1B)
711
712
713

4-2. MECHANICAL REPLACEMENT PARTS LIST

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
********		NV-S1E/B/A			
		NV-S100EN			
2(1)		VMC0651	LOCK LEVER (A) SPRING	1	
3(1)		VML2370	LOCK LEVER (A)	1	
4(1)		VXA4241	STAND (L) U.	1	
5(1)		VMB2096	HOLDER SPRING (L)	1	
6(1)		VMB2095	SAFETY LEVER SPRING	1	
7(1)		VXA4242	STAND (R) U.	1	
8(1)		VMB2097	HOLDER SPRING (R)	1	
9(1)		VMX1042	WASHER	1	
10(1)		VMB2215	CASSETTE LEVER SPRING	1	
11(1)		VXA3935	CASSETTE HOLDER U.	1	
13(1)		VMB2217	CHASSIS FRAME SPRING	1	
14(1)		VMC0660	HOUSING SPRING	1	
15(1)		VMD1680	MECH. SUB FRAME	1	
16(1)		VMP2824	SHOLDER ANGLE	1	
17(1)		VMP2941	ANGLE (A)	1	
18(1)		VYQ0479	CASSETTE LEVER ANGLE U.	1	
19(1)		VYQ0480	CASSETTE FRAME U.	1	
20(1)		VYQ0496	CHASSIS FRAME U.	1	
21(1)		VYQ0499	SAFETY LEVER U.	1	
22(1)		VMP2774	A/V JACK ANGLE	1	
23(1)		VMD1624	TRIPOD FRAME	1	
24(1)		VMP2768	MECH. SET ANGLE (A)	1	
25(1)		VMP2770	MECH. SET ANGLE (C)	1	
26(1)		VMP2769	MECH. SET ANGLE (B)	1	
27(1)		VMX1891	WASHER	4	
28(1)		VEK5142	DEW SENSOR U.	1	
29(1)		VHD0667	SCREW	2	
30(1)		VMX1984	WASHER	2	
31(1)		VMX1985	WASHER (A)	2	
101(2)		VDG0642	DRIVE GEAR (A)	1	
102(2)		VDG0643	DRIVE GEAR (C)	1	
103(2)		VDG0644	DRIVE GEAR (D)	1	
104(2)		VMB2090	T4 POST SPRING	1	
105(2)		VMB2098	TAPE OPENER SPRING	1	
106(2)		VMB2099	T (1) TURNER SPRING	1	
107(2)		VMB2101	A/C BASE SPRING	1	
108(2)		VMB2103	T5 ARM SPRING	1	
109(2)		VMD1516	TAPE OPENER	1	
110(2)		VMD1517	T1 RETURNER	1	
111(2)		VMX1844	T4 FLANGE	1	
112(2)		VMX1805	T4 POST	1	
113(2)		VMX1806	A/C COLLAR	1	
114(2)		VMD1500	S RACK GUIDE	1	
115(2)		VXA3907	S RACK U.	1	
116(2)		VXA3909	S SHAFT HOLDER (2) U.	1	
117(2)		VXP1197	S2 ROLLER POST U.	1	
118(2)		VMC0566	T1 SHAFT HOLDER PLATE	1	
119(2)		VMD1501	T RACK GUIDE	1	
120(2)		VMS4254	T1 SHAFT HOLDER PIN	1	
121(2)		VXA3915	T RACK U.	1	
122(2)		VXA3917	T SHAFT HOLDER (1) U.	1	
123(2)		VXP1162	T ROLLER POST U.	1	
124(2)		VXA3920	T2 SHAFT HOLER (2) U.	1	
125(2)		VXP1162A	ROLLER POST U.	1	
126(2)		VXA3923	T RAIL (L) (1) U.	1	
127(2)		VXA3925	T RAIL (R) U.	1	
128(2)		VEK5122	A/C HEAD (B) (1) U.	1	
129(2)		VXA3931	PULLEY PLATE U.	1	
130(2)		VMD1671	T2 V STOPPER	1	
131(2)		VMC0586	SPRING	1	
132(2)		VMD1493	U-T1	1	
133(2)		VXA3940	ST%V STOPPER U.	1	
134(2)		VXJ0086	IMPEDANCE ROLLER U.	1	
135(2)		VXL2061	PINCH ARM (1) U.	1	
136(2)		VMB2087	ARM SPRING	1	
137(2)		VML2362	CORRECTOR (A)	1	
138(2)		VXL2064	CORRECTOR (B) U.	1	
139(2)		VXL1976	+5 ARM (1) U.	1	
140(2)		VXP1157	T CLUTCH GEAR U.	1	
141(2)		VMC0614	IMPEDANCE SPRING	1	
142(2)		VEG0854	CYLINDER U.	1	
143(2)		VEH0502-SER	UPPER CYLINDER U.	1	
144(2)		VMX1061	WASHER	9	
145(2)		VHD0592	SCREW	1	
146(2)		VHD0561	SCREW	3	
147(2)		VMX1777	WASHER	1	
148(2)		VHN0047	NUT	1	
149(2)		VMB2036	A/C TILT SPRING	1	
150(2)		VHD0525	SCREW	1	
151(2)		VHD0526	SCREW	1	
152(2)		VHD0536	SCREW	1	
153(2)		VHN0142	NUT	2	
154(2)		VHD0593	SCREW	2	
155(2)		VHD0389	SCREW	3	
156(2)		VMB2102	CORRECTOR SPRING	1	
157(2)		VMB2100	P5 POST SPRING	1	
158(2)		VMA8113	A/C HEAD BASE	1	
201(3)		VDG0645	LOADING GEAR (2)	1	
202(3)		VDG0646	LOADING GEAR (3)	1	
203(3)		VDG0647	LOADING GEAR (4)	1	
204(3)		VDG0648	LOADING GEAR (5)	1	
205(3)		VDG0649	LOADING GEAR (T1)	1	
206(3)		VDG0731	ZENEBA GEAR	1	
207(3)		VEM0359	LOADING MOTOR (2) U.	1	
208(3)		VMA8111	WORM HOLDER	1	
209(3)		VMX1744	WORM SHAFT HOLDER	1	
210(3)		VXP1175	WORM U.	1	
211(3)		VMD1515	BAND GUIDE	1	
212(3)		VMD1518	CASS. POSITIONING PIECE (S)	1	
213(3)		VMD1519	CASS. POSITIONING PIECE (T)	1	
214(3)		VMD1530	FE CAP	1	
215(3)		VXA4244	LOADING GEAR S1 U.	1	
216(3)		VEK4700	FE HEAD U.	1	
217(3)		VMB2082	S4 POST SPRING	1	
218(3)		VMX1740	S4 LOWER FLANGE	1	
219(3)		VMX1859	S4 SLEEVE	1	
220(3)		VXA4247	S RAIL (1) U.	1	
221(3)		VXA3924	T1 RAIL M U.	1	
222(3)		VXA3928	LOCK BASE U.	1	
223(3)		VXG0025	CAM GEAR (1) U.	1	
224(3)		VXG0023	LOADING GEAR T2 U.	1	
225(3)		VXL1960	SECTOR GEAR U.	1	
226(3)		VMB2084	PINCH HOLDING SPRING	1	
227(3)		VMB2085	PINCH PRESSURE SPRING	1	
228(3)		VXL1964	CORRECTOR DRIVE ARM U.	1	
229(3)		VXL2062	CENTRE GEAR (1) U.	1	
230(3)		VXL2059	TENSION ARM U.	1	
231(3)		VXR0205	S REEL TABLE U.	1	
232(3)		VXZ0278	TENSION REGURATOR U.	1	
233(3)		VMX1840	WASHER	1	
234(3)		VMX1061	WASHER	11	
235(3)		VMB2086	TENSION SPRING	1	
236(3)		VMX1840	WASHER	2	
237(3)		VHN0150	NUT	1	
238(3)		VMB2083	(T) RAIL SPRING	1	
239(3)		VMB2080	LOADING GEAR SPRING	1	
240(3)		VMB2091	EJECT LEVER (A) SPRING	1	
241(3)		VMB2093	EJECT LEVER (B) SPRING	1	
242(3)		VHN0142	NUT	1	
243(3)		VMB2081	(T) LOADING GEAR SPRING	1	
301(4)		VEM0384	CAPSTAN MOTOR U.	1	
302(4)		VDB1046	LOWER BEARING	1	
303(4)		VEK5078	STATOR U.	1	
304(4)		VBK0056	MR HEAD	1	
305(4)		VHD0439	SCREW	3	
306(4)		VJF0886	FPC HOLDER	1	
307(4)		VXP1225	ROTOR U.	1	
308(4)		VMD1524	THRUST CAP	1	
309(4)		VDP1300	PULLEY	1	
310(4)		VDV0212	CAPSTAN BELT	1	
311(4)		VMD1580	PULLEY CAP	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
312(4)		VSH0044	SAFETY SWITCH	2	
313(4)		VXS0095	EARTH BRUSH	1	
314(4)		VMZ1648	MECH. FLEX. BARRIER	1	
315(4)		VHD0389	SCREW	3	
316(4)		VHD0593	SCREW	2	
317(1)		VHD0598A	SCREW	1	
401(5)		VXW0072	LENS U.	1	
402(5)		VXQ0241	LENS MAIN U.	1	
403(5)		VXP1212	2ND MOVING FRAME U.	1	
404(5)		VXP1214	SCREW SHAFT U.	1	
405(5)		VXQ0242	3RD FRAME U.	1	
406(5)		VXL2056	IRIS U.	1	
407(5)		VXP1213	4TH MOVING FRAME U.	1	
408(5)		VMD1629	MASTER FLANGE	1	
609(5)		VEK5092	ZOOM ENCODER U.	1	
410(5)		VEM0385	ZOOM MOTOR U.	1	
411(5)		VEM0386	FOCUS MOTOR U.	1	
413(5)		VWJ0458	LENS FLEXIBLE CABLE	1	
414(5)		VMT0336	CUSHION	1	
415(5)		VDL0264	CRYSTAL FILTER	1	
416(5)		VMX1846	CCD CUSHION	1	
418(5)		VMA8283	CCD HOLDER	1	
420(5)		MN3725FE	CCD	1	
501(6)		VKF1641	BATTERY COVER	1	NV-S1E/B/A-K,
					S100EN-K
501(6)		VKF1566	BATTERY COVER	1	NV-S1E/B/A-S,
					S100EN-S
501(6)		VKF1567	BATTERY COVER	1	NV-S1E/B/A-Y,
					S100EN-Y
502(6)		VKF1515	AV JACK COVER	1	
503(6)		VDB1087	STEEL BALL	1	
504(6)		M01KKX07WB01	ITC	1	
505(6)		VGQ2207	CRT RING	1	
506(6)		VKM2337	CRT COVER	1	
507(6)		VMC0624	EVF SPRING	1	
508(6)		VMC0652	EVF HOLD SPRING	1	
509(6)		VMG0556	RUBBER CAP	1	
510(6)		VMP2826	EVF C.B.A. ANGLE	1	
511(6)		VMP2912	POSITIONING ANGLE	1	
512(6)		VMZ1734	BARRIER (L) 2	1	
513(6)		VMZ1736	BARRIER (CRT COVER)	1	
514(6)		VMZ1737	BARRIER (FBT)	1	
515(6)		VMZ1739	BARRIER (CRT COVER) 1	1	
516(6)		VKM2537	ZOOM BUTTON CASE	1	NV-S1E/B/A-K,
					S100EN-K
516(6)		VKM2541	ZOOM BUTTON CASE	1	NV-S1E/B/A-S,
					S100EN-S
516(6)		VKM2548	ZOOM BUTTON CASE	1	NV-S1E/B/A-Y,
					S100EN-Y
517(6)		VGU5224	ZOOM BUTTON	1	
518(6)		VMZ1735	BARRIER (ZOOM CASE) 1	1	
519(6)		VMZ1711	BARRIER (ZOOM CASE)	1	
520(6)		VEK5064	MIC U.	1	
523(6)		VYK3509	SIDE CASE (L) (1) U.	1	NV-S1E/B/A-K,
					S100EN-K
523(6)		VYK3518	SIDE CASE (L) (1) U.	1	NV-S1E/B/A-S,
					S100EN-S
523(6)		VYK3518	SIDE CASE (L) (1) U.	1	NV-S1E/B/A-Y,
					S100EN-Y
524(6)		VEK5067	BATTERY TERMINAL U.	1	
525(6)		VGQ2256	BATTERY TERMINAL HOLDER	1	
526(6)		VMP2827	LENS COVER ANGLE	1	
527(6)		VYC0408	GRIP BELT U.	1	NV-S1E/B/A-K,
					S100EN-K
527(6)		VYC0437	GRIP BELT U.	1	NV-S1E/B/A-S/Y,
					S100EN-S/Y
528(6)		VKF1538	FOOD CAP	1	
529(6)		VYK3229	S/S BUTTON U.	1	
530(6)		VMZ1733	BARRIER (L) (1) U.	1	
531(6)		VMZ1743	BARRIER (BATT. HOLDER)	1	
532(6)		VGQ2203	AV JACK BOARD SHEET	1	
533(6)		VGQ2257	DC JACK SHEET	1	
534(6)		VMP2774	AV JACK SET ANGLE	1	
535(6)		VMZ1712	GND PLATE	1	
536(6)		VEJ1025	AV JACK BOARD	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
538(6)		VHD0598A	SCREW	1	
539(6)		VWJ0450	CAMERA-VTR FLEX.	1	
540(6)		VGQ2238	FOOD STRAP	1	
541(6)		VKC0378	FOOD CAP HINGE	1	
542(6)		VGU5229	S/S BUTTON	1	
543(6)		VMP2766	ANGLE (A)	1	
545(6)		VKM2409	MIC HOLDER	1	
548(6)		VGQ2206	EVF PIPE	1	
549(6)		VGU5337	HOLDER KNOB	1	
550(6)		VMB2235	HOLDER KNOB SPRING	1	
551(6)		VMC0670	KNOB SPRING	1	
552(6)		VDW0119	EVF LENS	1	
553(6)		VGU5230	EYE SIGHT RING	1	
554(6)		VKF1516	EYE CAP HOLDER	1	
555(6)		VKF1517	LENS HOLDER	1	
556(6)		VKF1532	HOLDER GUIDE	1	
557(6)		VMG0557	EYE CAP	1	
558(6)		VMX1925	HOLDER SPACER	2	
559(6)		VEK5065	S/S BOARD	1	
560(6)		VEK5367	DC JACK U	1	
601(7)		VDW0124	LENS FOOD	1	
602(7)		VDW0135	LENS COVER RING	1	
603(7)		VMZ1718	BARRIER (LENS)	1	
604(7)		VSC3308	SENSOR SHIELD CASE (B)	1	
605(7)		VMZ1710	BARRIER	2	
606(7)		VMP3011	CAMERA FRAME	1	
607(7)		VSC3307	SENSOR SHIELD (A)	1	
608(7)		VMZ1732	BARRIER (CAMERA)	1	
609(7)		VYK3507	SIDE CASE (R) U.	1	NV-S1E/B/A-K,
					S100EN-K
609(7)		VYK3511	SIDE CASE (R) U.	1	NV-S1E/B/A-S,
					S100EN-S
609(7)		VYK3523	SIDE CASE (R) U.	1	NV-S1E/B/A-Y,
					S100EN-Y
610(7)		VGU5228	BATT. EJECT BUTTON	1	
611(7)		VMB2216	BATT. EJECT BUTTON	1	
612(7)		VMP2765	BATT. EJECT ANGLEN	1	
613(7)		VYP3371	CASSETTE COVER U.	1	NV-S1E/B/A-K,
					S100EN-K
613(7)		VYP3373	CASSETTE COVER U.	1	NV-S1E/B/A-S,
					S100EN-S
613(7)		VYP3376	CASSETTE COVER U.	1	NV-S1E/B/A-Y,
					S100EN-Y
614(7)		VEK5063	BATT. TERMINAL BOARD	1	
615(7)		VKF1531	LENS COVER	1	
617(7)		VMZ1744	CASSETTE BARRIER (LOWER)	1	
618(7)		VMZ1745	CASSETTE BARRIER	1	
620(7)		VES0603	TOP OPERATION PANEL U.	1	NV-S1E/B/A-K,
					S100EN-K
620(7)		VES0608	TOP OPERATION PANEL U.	1	NV-S1E/B/A-S,
					S100EN-S
620(7)		VES0609	TOP OPERATION PANEL U.	1	NV-S1E/B/A-Y,
					S100EN-Y
621(7)		ESU12350	CAMERA OPERATION BOARD	1	
701(8)		VQT3908	OPERATIONG INSTRUCTIONS	1	NV-S1B
			(ENGLISH)		
701(8)		VGT3909	OPERATING INSTRUCTIONS	1	NV-S1E
			(ENGLESH/GERMAN)		
701(8)		VQT3910	OPERATING INSTRUCTIONS	1	NV-S1E
			(FRENCH/SPANISH)		
701(8)		VQT3911	OPERATING INSTRUCTIONS	1	NV-S1E
			(ITALIAN/DUTCH)		
701(8)		VQT3912	OPERATING INSTRUCTIONS	1	NV-S1E
			(FINNISH/DANISH)		
701(8)		VQT3913	OPERATING INSTRUCTIONS	1	NV-S1E
			(SWEDISH)		
701(8)		VQT3914	OPERATING INSTRUCTIONS	1	NV-S1A
			(ENGLISH)		
701(8)		VQT3915	OPERATING INSTRUCTIONS	1	NV-S100EN
			(ENGLISH/CHINESE)		
701(8)		VQT3916	OPERATING INSTRUCTIONS	1	NV-S100EN
			(ARABIC/HINDY)		
702(8)		VFA0039	AV OUTPUT CABLE	1	NV-S1B/A, S100EN

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
702(8)		VFA0015	AV OUTPUT CABLE	1	NV-S1E
703(8)		VPN2937	ACCESSORY BOX	1	
704(8)		VPN2938	PAD	1	
705(8)		VFC0729	SHOLDER BELT	1	
706(8)		VFA0097	PHONO/BNC PLUG	1	NV-S1B
707(8)		VJA0376	DIN RF CABLE	1	NV-S1B/A, S100EN
708(8)		VJA0591	DC CORD	1	
709(8)		VPN2954	SPACER PAD	1	NV-S1B
710(8)		VPN2861	CUSHION (UPPER)	1	
711(8)		VPN2862	CUSHION (LOWER)	1	
712(8)		VPG5707	PACKING CASE	1	NV-S1B-K
712(8)		VPG5708	PACKING CASE	1	NV-S1E-S
712(8)		VPG5757	PACKING CASE	1	NV-S1B-Y
712(8)		VPG5709	PACKING CASE	1	NV-S1B-K
712(8)		VPG5710	PACKING CASE	1	NV-S1E-S
712(8)		VPG5758	PACKING CASE	1	NV-S1E-Y
712(8)		VPG5711	PACKING CASE	1	NV-S1A-K
712(8)		VPG5712	PACKING CASE	1	NV-S1A-S
712(8)		VPG5759	PACKING CASE	1	NV-S1B-Y
712(8)		VPG5713	PACKING CASE	1	NV-S100EN-K
712(8)		VPG5714	PACKING CASE	1	NV-S100EN-S
712(8)		VPG5715	PACKING CASE	1	NV-S100EN-Y
713(8)		VPN2329	HANDLE	1	
714(8)		VFA0029	AUDIO CABLE	1	NV-S1E
			JIG & TOOLS		
		VFM8180HUPF	VHS-C ALIGNMENT TAPE	1	PAL
		VFK0374	COLOUR TEMP.CONV.FILTER	1	(C12)
		VEK0375	COLOUR TEMP.CONV.FILTER	1	(C2)
		VEK0547	COLOUR TEMP.CONV.FILTER	1	(C8)
		VFK0667	30 PIN EXTENSION CABLE	2	
		VFK0668	24 PIN EXTENSION CABLE	1	
		VFK0669	25-24 PIN FLAT CABLE	1	
		VFK0670	18 PIN FLAT CABLE	1	
		VFK0672	13 PIN EXTENSION CABLE	1	
		VFK0644	EVR FIXTURE	1	
		VFK0335	RETAINING RING REMOVER	1	
		VFK0329	POST ADJUSTMENT SCREW	1	
			DRIVER		
		VFK03343	CHECK LIGHT	1	
		VFK0326	HEX WRENCH SET	1	
		VFK27	HEAD CLEANING STICK	1	
		MOR265	MORLYTONE GREASE	1	

4-3. ELECTRICAL REPLACEMENT PARTS LIST

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.
3.Unless otherwise specified,
All resistors are in OHMS ,K=1,000 OHMS. All capacitors are in MICROFARADS(uf),P=uuF.
4.The P.C.Board units marked width'■'show below the main assembled parts.
5.Printed circuit board assembly with mark(NIA) is no longer available after discontinuation of the product.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
********		NV-S1E/B/A			
		NV-S100EN			
		VEP22101A	SENSOR C.B.A.	1	(NIA)
		VEP23112A	PROCESS C.B.A.	1	(NIA)
		VEP22092B	CCD C.B.A.	1	(NIA)
		VEP28030B	E.V.F. C.B.A.	1	(NIA)
		VEP06746A	VTR MAIN C.B.A.	1	(NIA)
			VTR OPERATION C.B.A.	1	(NIA)
		VEP02370A	DRIVE C.B.A.	1	(NIA)
		VEP06698A	MECHANISM FLEXIBLE CABLE	1	(NIA)
			C.B.A.		
		VEP00Q29A	FOCUS ENCODER C.B.A.	1	(NIA)
		VEK5066	ZOOM C.B.A.	1	(NIA)
	■	VEP22101A	SENSOR C.B.A.		(NIA)
			CONNECTORS		
B201		VJP2963C030	CONNECTOR(MALE)	1	
B202		VJP2965C030	CONNECTOR(MALE)	1	
			CAPACITORS		
C101,02		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C103		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C104,05		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	2	
C109		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C110		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C115		ECEV05A470	E.CAPACITOR 4V 47U	1	
C116		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C118		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C120		ECRJA020E11X	.CAPACITOR V	1	
C121		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C122		ECST1AY225Z	T.CAPACITOR 10V 2.2U	1	
C124		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C130		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C131		ECUX1H471KBV	C.CAPACITOR CH 50V 470P	1	
C132,33		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	2	
C134		ECUX1H391KBV	C.CAPACITOR CH 50V 390P	1	
C136		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C153		ECUX1H681KBV	C.CAPACITOR CH 50V 680P	1	
C201		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C202,03		ECUM1C475ZFM	C.CAPACITOR CH 16V 4.7U	2	
C204		ECST1CX685Z	T.CAPACITOR 16V 68U	1	
C205		ECUM1C475ZFM	C.CAPACITOR CH 16V 4.7U	1	
C206		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C207		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C208		ECST1CX685Z	T.CAPACITOR 16V 68U	1	
C209		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C210		ECUM1C475ZFM	C.CAPACITOR CH 16V 4.7U	1	
C211		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C212		ECUM1C475ZFM	C.CAPACITOR CH 16V 4.7U	1	
C213		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C214		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C215		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C216-18		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	3	
C219		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C220		ECRJA020E11X	.CAPACITOR V	1	
C221		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	1	
C223		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C224		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C225		ECUX1C473ZFV	C.CAPACITOR CH 16V 0.047U	1	
C226		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C227		ECST0GX226Z	T.CAPACITOR 4V 22U	1	
C228,29		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C230-32		ECST1CX685Z	T.CAPACITOR 16V 68U	3	
C233		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C234-36		ECUX1H180JCV	C.CAPACITOR CH 50V 18P	3	
C237		ECST1CX685Z	T.CAPACITOR 16V 68U	1	
C238		ECUX1C473ZFV	C.CAPACITOR CH 16V 0.047U	1	
C239-45		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	7	
C246,47		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	2	
C249		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	1	
C250		ECST0GX226Z	T.CAPACITOR 4V 22U	1	
C251		ECUX1H080CCV	C.CAPACITOR CH 50V 8P	1	
C252		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C263-65		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	3	
C266		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C267		ECUX1H100DCV	C.CAPACITOR CH 50V 10U	1	
C268		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C269		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C271		ECST1CC106Z	T.CAPACITOR 16V 10U	1	
C272,73		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	2	
C274		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C275,76		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	2	
C277		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C281		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
C283		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C286		ECUM1C474ZFN	C.CAPACITOR CH 16V 0.47U	1	
C287		ECUX1H080CCV	C.CAPACITOR CH 50V 8P	1	
C288		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C289		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C290		ECUX1H060CCV	C.CAPACITOR CH 50V 6P	1	
C291		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C293		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C294		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C705,06		ECST1AX106Z	T.CAPACITOR 10V 10U	2	
C707		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C708		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C709		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C710,11		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	2	
C712		ECUX1C473ZFV	C.CAPACITOR CH 16V 0.047U	1	
C713,14		ECST1AX106Z	T.CAPACITOR 10V 10U	2	
C716		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C717		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C720		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C721-24		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	4	
C725		ECUX1C683ZFV	C.CAPACITOR CH 16V 0.068U	1	
C726		ECEV05A470	E.CAPACITOR 4V 47U	1	
C727		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	1	
C728		ECRJA020E11X	.CAPACITOR V	1	
C729		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C730		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C731		ECEV05A470	E.CAPACITOR 4V 47U	1	
C732		ECST1CY105Z	T.CAPACITOR 16V 1U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C733		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C735		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C744,45		ECUM1C475ZFM	C.CAPACITOR CH 16V 4.7U	2	
C752-54		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	3	
C755		ECST1CX685Z	T.CAPACITOR 16V 68U	1	
C770		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C790		ECUX1H332KBV	C.CAPACITOR CH 50V 3300P	1	
C791,92		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C793		ECEV0JA101	E.CAPACITOR 6.3V 100U	1	
			DIODES		
D101		MA110	DIODE	1	
D103		MA334B	DIODE	1	
D104		MA110	DIODE	1	
D201		MA110	DIODE	1	
D202		MA133	DIODE	1	
D203		MA110	DIODE	1	
D204		MA728	DIODE	1	
D205-12		MA110	DIODE	8	
D701		MA110	DIODE	1	
D702		MA133	DIODE	1	
D703-06		U1FWJ49		4	
			FILTERS		
FL202		VLF0883		1	
FL203		EIK4EW006T	FILTER	1	
FL701		VLF0915	FILTER	1	
			CONNECTORS		
FP201		VJS2960C012	CONNECTOR(FEMALE)	1	
FP202		VJS2960C020	CONNECTOR(FEMALE)	1	
			ICS		
IC102		S8052ANBNE	IC	1	
IC104		MN1551VFMA	IC	1	
IC105		S8054ALBLM	IC	1	
IC106		MN73039VSMS	IC	1	
IC107		UPD4364G	IC	1	
IC108		TC7S08F	IC	1	
IC112		TC7S08F	IC	1	
IC201		MN5145FHP	IC	1	
IC202		UPD16501GS	IC	1	
IC203		AN2012SB	IC	1	
IC204		AN2015FAP	IC	1	
IC205,06		TC7S08F	IC	2	
IC701		LM358DB	IC	1	
IC702		AN2585FAP	IC	1	
IC703		MN67801VCX	IC	1	
IC704		TB6503AF	IC	1	
IC705		AN6663S	IC	1	
IC706		AN6545SP	IC	1	
IC709		LM324DB	IC	1	
IC710		MN1551VUSA	IC	1	
IC712		TC7S04F	IC	1	
			COILS		
L101		ELJFB331KF	COIL H	1	
L103		ELJFC150KF	COIL H	1	
L108		ELJFC4R7KF	COIL H	1	
L202,03		ELJFC150KF	COIL H	2	
L204		ELJFA150KF	COIL H	1	
L205-07		ELJFC150KF	COIL H	3	
L208		ELJFA150KF	COIL H	1	
L209		ELJFC150KF	COIL H	1	
L210		ELJFC220KF	COIL H	1	
L211		ELJFC150KF	COIL H	1	
L212		ELJFC330KF	COIL H	1	
L213		ELJFA120JF	COIL H	1	
L220		ELJFA820JF	COIL H	1	
L701		ELJFC150KF	COIL H	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
L703		ELJFA150KF	COIL H	1	
L704		VLQ0401K220	COIL H	1	
L705,06		ELJFA101KF	COIL H	2	
L707		ELJFA150KF	COIL H	1	
			COMBINATIONS		
Q101		UN9210	TRANSISTOR-RESISTOR	1	
Q102		UN9214	TRANSISTOR-RESISTOR	1	
Q103		2SD2216	TRANSISTOR	1	
Q104		UN9214	TRANSISTOR-RESISTOR	1	
Q105		UN9213	TRANSISTOR-RESISTOR	1	
Q106		2SD2216	TRANSISTOR	1	
Q110		2SK198	TRANSISTOR CHIP	1	
Q130		UN9213	TRANSISTOR-RESISTOR	1	
Q131		UN9115	TRANSISTOR-RESISTOR	1	
Q201-05		2SD2216	TRANSISTOR	5	
Q206,07		2SA1790	TRANSISTOR	2	
Q208,09		2SD2216	TRANSISTOR	2	
Q210		XP4501	TRANSISTOR-TRANSISTOR	1	
Q211		2SC4627	TRANSISTOR	1	
Q212		XP4601	TRANSISTOR-TRANSISTOR	1	
Q213		2SA1610	TRANSISTOR	1	
Q214		2SC4176	TRANSISTOR	1	
Q215		2SA1610	TRANSISTOR	1	
Q216		2SC4176	TRANSISTOR	1	
Q217-19		2SB1462	TRANSISTOR	3	
Q220		2SD2216	TRANSISTOR	1	
Q221		2SC4627	TRANSISTOR	1	
Q222		2SD2216	TRANSISTOR	1	
Q223		XP4601	TRANSISTOR-TRANSISTOR	1	
Q281		XP4601	TRANSISTOR-TRANSISTOR	1	
Q701		UN9211	TRANSISTOR-RESISTOR	1	
Q704,05		2SD2216	TRANSISTOR	2	
			RESISTORS		
R107,08		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	2	
R109		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R110		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R111		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R113		ERJ3GEYJ225	M.RESISTOR CH 1/16W 2.2K	1	
R114		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R115		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R116		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R124		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R125		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R126		ERJ3GEYG153	M.RESISTOR CH 1/16W 15K	1	
R127		ERJ3GEYG272	M.RESISTOR	1	
R128		ERJ3GEYG562	M.RESISTOR CH 1/16W 5.6K	1	
R133		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R134,35		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R144		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R146		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R147		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R148		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R149		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R150		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R151		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R152		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R153-55		ERJ3GEYJ330	M.RESISTOR CH 1/16W 33	3	
R201		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R202		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R204		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R205		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R206		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R207		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R208		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R209		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R210		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R211		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R212,13		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	2	
R214		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R215		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	1	
R216,17		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R218,19		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	2	
R220,21		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R222		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R223-26		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	4	
R227-29		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	3	
R230,31		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R232		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R233		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R234		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R235		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R236,37		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	2	
R239		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R240		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R241		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R244		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R245		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R246		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R247		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R249		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R250,51		ERJ3GEYJ220	M.RESISTOR CH 1/16W 22	2	
R253		ERJ3GEYJ274	M.RESISTOR CH 1/16W 270K	1	
R254		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R255		ERJ3GEYJ121	M.RESISTOR CH 1/16W 120	1	
R257		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R258		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R259		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R260		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R261		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R262		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R263		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R264		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R270		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R271		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R272		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R273		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R274		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R275		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R280		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R281		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R282-85		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	4	
R289		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R701		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R706		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R707		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R709		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R711		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R712,13		ERJ3GEYJ124	M.RESISTOR CH 1/16W 120K	2	
R715		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R716		ERJ6GEYG472	M.RESISTOR CH 1/10W 4.7K	1	
R718		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R719		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R728		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R729,30		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R731,32		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	2	
R733		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R734,35		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R736		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R738,39		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R750		ERJ6GEYG303	M.RESISTOR CH 1/10W 30K	1	
R751		ERJ6GEYG103	M.RESISTOR CH 1/10W 10K	1	
R752		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R753,54		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R762		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R763		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R764		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R765		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R766		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R767		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R768		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R769		ERJ3GEYJ225	M.RESISTOR CH 1/16W 2.2K	1	
R770		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R771		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R774		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R775		ERJ6GEYJ100	M.RESISTOR CH 1/10W 10	1	
R780		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R781		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	
R782		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R783		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R784		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R787		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R790,91		ERJ3GEYJ5R6	M.RESISTOR	2	
R794,95		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R796-99		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	4	
RA101,02		EXBV8V104J		2	
			RESISTORS		
VR201		EVM7JSX30B54	V.RESISTOR 50K	1	
VR202		EVM7JSX30B24	V.RESISTOR 20K	1	
VR203		EVM7JSX30B25	V.RESISTOR 200K	1	
VR204		EVM7JSX30B15	V.RESISTOR W	1	
VR703		EVM7JSX30B14	V.RESISTOR 10K	1	
VR704		EVM7JSX30B54	V.RESISTOR 50K	1	
VR705,06		EVM7JSX30B14	V.RESISTOR 10K	2	
VR709,10		EVM7JSX30B53	V.RESISTOR 5K	2	
VR712		EVM7JSX30B14	V.RESISTOR 10K	1	
			CRYSTAL OSCILLATORS		
X101		VSX0412	CRYSTAL OSCILLATOR	1	
X102		VSX0432	CRYSTAL OSCILLATOR	1	
X201		VSX0240	CRYSTAL OSCILLATOR	1	
X701		EFOV8004E0A		1	
X702		EFOV4194E0A	CRYSTAL OSCILLATOR	1	
	■	VEP23112A	PROCESS C.B.A.		(NLA)
			CONNECTOR		
B301,02		VJS2961C030	CONNECTOR(FEMALE)	2	
			CAPACITORS		
C301,02		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	2	
C303		ECST0GY106Z	T.CAPACITOR 4V 10U	1	
C306		ECST0GY106Z	T.CAPACITOR 4V 10U	1	
C307		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	1	
C309		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C310		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C311		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C314		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C316		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C317		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C319		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C320,21		ECST1AX106Z	T.CAPACITOR 10V 10U	2	
C322		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C323		ECST0GY106Z	T.CAPACITOR 4V 10U	1	
C324		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C325		ECUX1H821KBV	C.CAPACITOR	1	
C326-29		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	4	
C330-32		ECST1AX106Z	T.CAPACITOR 10V 10U	3	
C333		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C335		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C337		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C338		ECUX1H330JCV	C.CAPACITOR	1	
C341		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C342,43		ECST1AX106Z	T.CAPACITOR 10V 10U	2	
C344		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C345		ECST0GY106Z	T.CAPACITOR 4V 10U	1	
C346		ECST1AX106Z	T.CAPACITOR 10V 10U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C350,51		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C356-60		ECST1AX106Z	T.CAPACITOR 10V 10U	5	
C362		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C363		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C364		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C365		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C366		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C367		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C368		ECST0GY106Z	T.CAPACITOR 4V 10U	1	
C369		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C370-75		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	6	
C376		ECUX1H471KBV	C.CAPACITOR	1	
C377		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C378		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C379-81		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	3	
C389		ECUX1H471KBV	C.CAPACITOR	1	
C390-02		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	13	
C403		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C404		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C405		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C406		ECUX1C473ZFV	C.CAPACITOR CH 16V 0.047U	1	
C410-20		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	11	
C421		ECUX1H471KBV	C.CAPACITOR	1	
C422,23		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	2	
C490		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
			FILTERS		
FL301,02		ELB4C524	FILTER	2	
FL303		ELB4G503	FILTER	1	
			CONNECTORS		
FP301		VJS2958D024	CONNECTOR(FEMALE)	1	
FP302		VJS2907D013	CONNECTOR(FEMALE)	1	
			ICS		
IC302		CXD1175AM	IC	1	
IC303		L7A0679	IC	1	
IC304		MN188166VZUA	IC	1	
IC305		MN6731FHP	IC	1	
IC306		MN6730FHP	IC	1	
IC307,08		MN4701S	IC	2	
IC309		MN65701FHP	IC	1	
IC310		MN188166VZVA	IC	1	
IC311		L7A0388	IC	1	
IC315		MN73512XWAS	IC	1	
IC317		AN2355FAP	IC	1	
IC318		MN12821Q	IC	1	
IC319		LM311DB	IC	1	
IC320		M6M80021FP		1	
IC351,52		TC7S08F	IC	2	
			COILS		
L301-03		ELJFC6R8ZF	COIL H	3	
L306-11		ELJFC6R8ZF	COIL H	6	
L313		ELJFC6R8ZF	COIL H	1	
L316		ELJFC6R8ZF	COIL H	1	
L318-20		ELJFC6R8ZF	COIL H	3	
L322		VLQ0291	COIL	1	
L323,24		ELJFC6R8ZF	COIL H	2	
			COMBINATIONS		
Q301		UN9214	TRANSISTOR-RESISTOR	1	
Q302		XP4501	TRANSISTOR-TRANSISTOR	1	
Q303		2SD2216	TRANSISTOR	1	
Q304		XP4401	TRANSISTOR	1	
Q305		2SB1462	TRANSISTOR	1	
Q306		XP4501	TRANSISTOR-TRANSISTOR	1	
Q307		2SC4626	TRANSISTOR	1	
Q308		UN9214	TRANSISTOR-RESISTOR	1	
Q309		XP4401	TRANSISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
Q310		XP4601	TRANSISTOR-TRANSISTOR	1	
			RESISTORS		
R300		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R302		ERJ3GEYJ560	M.RESISTOR CH 1/16W 56	1	
R303		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R304		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R305,06		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	2	
R307,08		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R309		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R310		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R311		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R315		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R316		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R317		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R318		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R319,20		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	2	
R321		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R322		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R323		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R324		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R325		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R326		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R327		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R328		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R329		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R330		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R331		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R332		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R333		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R338		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R339,40		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	2	
R341		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R342		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	1	
R343		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R344		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R345		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R346		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R347		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R348		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R349		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R352		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R354		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R355		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R357,58		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	2	
R359		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R360		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R361		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R362		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	
R363-66		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	4	
R367-70		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	4	
R371		ERJ3GEYG153	M.RESISTOR CH 1/16W 15K	1	
R372		ERJ3GEYG562	M.RESISTOR CH 1/16W 5.6K	1	
R373,74		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	2	
R384		ERJ3GEYJ221	M.RESISTOR CH 1/16W 220	1	
R385		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R386		ERJ3GEYG122	M.RESISTOR	1	
R387		ERJ3GEYG222	M.RESISTOR CH 1/16W 2.2K	1	
R388		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R389		ERJ3GEYG182	M.RESISTOR	1	
R390		ERJ3GEYG222	M.RESISTOR CH 1/16W 2.2K	1	
R391		ERJ3GEYG822	M.RESISTOR CH 1/16W 8.2K	1	
R392-99		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	8	
R400,01		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	2	
R408		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R409		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R410		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R423		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R424		ERJ3GEYG201	M.RESISTOR	1	
R425		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R426		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R427		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R431,32		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R433		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R434		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R435		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R436,37		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	2	
R438		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R439,40		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R444		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R445-48		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	4	
R450,51		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	2	
R460		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R461		ERJ3GEYJ564	M.RESISTOR CH 1/16W 560K	1	
R477		ERJ3GEYG823	M.RESISTOR CH 1/16W 82K	1	
R480		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R481		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R482		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
RA401,02		EXBV8V682J		2	
RA404,05		EXBV8V103J		2	
RA407,08		EXBV8V103J		2	
RA410-14		EXBV4V101J		5	
RA415		EXBV8V101J		1	
RA416		EXBV4V102J		1	
RA417-20		EXBV8V101J		4	
VR313		EVM7JSX30B13	V.RESISTOR 1K	1	
X301		EFOV8004E0A		1	
			MISCELLANEOUS		
		VSC3294	PROCESS SHIELD CASE (A)	1	
		VSC3295	PROCESS SHIELD CASE (B)	1	
	■	VEP22092B	CCD C.B.A.		(NLA)
			CAPACITORS		
C262		ECST1AD476ZR	T.CAPACITOR	1	
C257		ECUV1C475ZFM	C.CAPACITOR	1	
C254,255		ECUV1E473ZFM	C.CAPACITOR	2	
			RESISTORS		
R241		ERJ6GEYJ472V	M.RESISTOR CH	1	
R240		ERJ6GEYJ560V	M.RESISTOR CH	1	
			TRANSISTOR		
Q211		2SD601A-TW	TRANSISTOR	1	
	■	VEP28030B	E.V.F. C.B.A.		(NLA)
			CONNECTOR		
B801		VJP2964F013	CONNECTOR(MALE)	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			CAPACITORS		
C801		ECUM1E104JBM	C.CAPACITOR CH 25V 0.1U	1	
C802		ECST1AV476ZR	.CAPACITOR V	1	
C803		ECUX1H121JCV	C.CAPACITOR CH 50V 120P	1	
C804		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C805		ECEA0JKA221	E.CAPACITOR 6.3V 220U	1	
C806		ECUM1E223KBN	C.CAPACITOR CH 25V 0.023U	1	
C807		ECUM1C105JBP	C.CAPACITOR CH 16V 1U	1	
C808		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C809		ECA1CKF470	E.CAPACITOR 16V 47U	1	
C810		ECUM2A272JUM	C.CAPACITOR CH 10V 2700P	1	
C811		ECST1AV476ZR	.CAPACITOR V	1	
C812		ECUX1H101JV	C.CAPACITOR CH 50V 100P	1	
C813		VCK0088K151E	.CAPACITOR V	1	
C814		ECEV1HAS010	E.CAPACITOR 50V 1U	1	
C815		VCK0058K331E	.CAPACITOR V	1	
C816		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
			DIODES		
D801		MA141A	DIODE	1	
D802		SFPL-52V	DIODE	1	
D803		ERA34-10	DIODE	1	
D804,05		MA8056-TX	DIODE	2	
			IC		
IC801		AN2514S	IC	1	
			COILS		
L801		VLQ0469	COIL H	1	
L802		ELH5L215	COIL H	1	
			CONNECTORS		
P801		VJP2273	CONNECTOR	1	
P802		VJP2272	CONNECTOR(MALE)	1	
P803		VJP2271	CONNECTOR(MALE)	1	
P804,05		VJP2272	CONNECTOR(MALE)	2	
			TRANSISTORS		
Q801		2SB1218-Q		1	
Q802		2SD968A-S	TRANSISTOR	1	
Q803		2SA1532-B		1	
			RESISTORS		
R801		ERJ3EKS4422V	.RESISTOR W	1	
R802		ERJ6GMYJ3R9	M.RESISTOR CH 1/10W 3.9	1	
R805		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R807		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R808		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R809		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R810		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R811,12		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R813		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R814		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R815		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R816		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R817		ERJ3GEYJ242	M.RESISTOR CH 1/16W 2.4K	1	
R818		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R819,20		ERJ6GMYJ335	M.RESISTOR	2	
R821		ERJ6GMYJ105	M.RESISTOR CH 1/10W 1M	1	
R823		ERJ6GMYJ120	M.RESISTOR CH 1/10W 12	1	
R824		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
S801		VJJW0027		1	
			TRANSFORMER		
T801		ECXC0710	TRANSFORMER	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			RESISTORS		
VR801		EVM7JSX30BE2	V.RESISTOR W	1	
VR802		EVM7JSX30B54	V.RESISTOR 50K	1	
VR803		EVMLPNA00BV6	V.RESISTOR W	1	
VR804		EVMLPNA00BE6	V.RESISTOR W	1	
	■	VEP06746A	VTR MAIN C.B.A.		(NLA)
			CAPACITORS		
C03,04		ECUM1C473KBV	C.CAPACITOR CH 16V 0.047U	2	
C05		ECUX1E223ZFV	C.CAPACITOR CH 25V 0.022U	1	
C06		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C07		ECUX1E681JV	C.CAPACITOR CH 25V 680U	1	
C08		ECUX1H391JV	C.CAPACITOR CH 50V 390P	1	
C11		ECUM1E103ZFQ	C.CAPACITOR	1	
C12		ECUM1H100DCQ	C.CAPACITOR	1	
C13		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C14		ECUM1E103ZFQ	C.CAPACITOR	1	
C15		ECUX1E223ZFV	C.CAPACITOR CH 25V 0.022U	1	
C16		ECUM1E103ZFQ	C.CAPACITOR	1	
C17		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C18		ECUM1E103ZFQ	C.CAPACITOR	1	
C19		ECUX1H561JV	C.CAPACITOR CH 50V 560P	1	
C20		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C21		ECUM1E103ZFQ	C.CAPACITOR	1	
C24		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C25		ECUX1H332KBV	C.CAPACITOR CH 50V 3300P	1	
C26,27		ECUM1E103ZFQ	C.CAPACITOR	2	
C1001		ECGL1BA4R7	.CAPACITOR V	1	
C1005		ECGL0KA8R2	.CAPACITOR V	1	
C1006		ECUX1H331KBV	C.CAPACITOR CH 50V 330P	1	
C1007		ECGL0KA8R2	.CAPACITOR V	1	
C1008		ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	1	
C1010		ECGL1BA4R7	.CAPACITOR V	1	
C1011		ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	1	
C1012		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C1013		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C1014		ECUM1C335ZFM	C.CAPACITOR CH 16V 3.3U	1	
C1015		ECEV1CA100	E.CAPACITOR 16V 10U	1	
C1017,18		ECGL1BA4R7	.CAPACITOR V	2	
C1019		ECST1CY335Z	T.CAPACITOR 16V 3.3U	1	
C1020		ECEV1AA330	E.CAPACITOR 10V 330U	1	
C1021		ECUX1H392KBV	C.CAPACITOR CH 50V 3900P	1	
C1023		ECST0GY106Z	T.CAPACITOR 4V 10U	1	
C1024		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	1	
C1025		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C1026		ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	1	
C1027		ECUX1H471KBV	C.CAPACITOR CH 50V 470P	1	
C1028		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C1029		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C1030		ECUX1H471KBV	C.CAPACITOR CH 50V 470P	1	
C1031		ECUX1H822KBV	C.CAPACITOR CH 50V 8200P	1	
C1032		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C1033		ECUM1C474ZFM	C.CAPACITOR CH 16V 0.47U	1	
C1034		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C1037		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C1040		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	1	
C1041		ECST1CY335Z	T.CAPACITOR 16V 3.3U	1	
C1051,52		ECUX1H392KBV	C.CAPACITOR CH 50V 3900P	2	
C2001		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C2002		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C2003		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C2004		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C2005		ECUM1C105ZFM	C.CAPACITOR CH 16V 1U	1	
C2006		ECEV1CAS100	E.CAPACITOR 16V 10U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C2007		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C2008		ECUX1E223ZFV	C.CAPACITOR CH 25V 0.022U	1	
C2010		ECUX1H561KBV	C.CAPACITOR CH 50V 560P	1	
C2011		ECUX1H103ZFV	C.CAPACITOR	1	
C2012,13		ECUM1C105KB	C.CAPACITOR	2	
C2014,15		ECST0JX156Z	T.CAPACITOR 6.3V 15U	2	
C2016		ECUX1H472ZFV	C.CAPACITOR CH 50V 4700P	1	
C2019		ECUX1H561KBV	C.CAPACITOR CH 50V 560P	1	
C2020		ECUM1E104KBM	C.CAPACITOR CH 25V 0.1U	1	
C2021		ECUX1C393ZFV	C.CAPACITOR CH 16V 0.039U	1	
C2022		ECUX1H272KBV	C.CAPACITOR CH 50V 2700P	1	
C2023		ECUM1E104KBM	C.CAPACITOR CH 25V 0.1U	1	
C2024		ECHU1C273JA		1	
C2025		ECUM1C105KB	C.CAPACITOR	1	
C2027,28		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	2	
C2029		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C2030		ECUX1H472KBV	C.CAPACITOR CH 50V 4700P	1	
C2031		ECUM1E104KBM	C.CAPACITOR CH 25V 0.1U	1	
C2032		ECUM1C274KBM	C.CAPACITOR CH 16V 0.27U	1	
C2036		ECUM1C105KB	C.CAPACITOR	1	
C2038		ECUX1H122KBV	C.CAPACITOR CH 50V 1200P	1	
C2039		ECUM1C474KBM	C.CAPACITOR CH 16V 0.47U	1	
C2040		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C2041		ECEV1AA330	E.CAPACITOR 10V 330U	1	
C2042		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C2043,44		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C2045		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C2046		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C2047		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C2051,52		ECUX1H122KBV	C.CAPACITOR CH 50V 1200P	2	
C3001		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C3002		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C3004		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C3005		ECEV05A470	E.CAPACITOR 4V 47U	1	
C3006		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C3007		VCK0097	.CAPACITOR V	1	
C3008		ECEV05A470	E.CAPACITOR 4V 47U	1	
C3009		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C3010		ECUM1C475ZFM	C.CAPACITOR CH 16V 4.7U	1	
C3011		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C3013		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C3014		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C3015,16		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	2	
C3017		ECUM1E103ZFQ	C.CAPACITOR	1	
C3018		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C3035		ECEV0GA221	E.CAPACITOR 4V 220U	1	
C3036		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C3037		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C3038		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3039		ECEV0GA101	E.CAPACITOR 4V 100U	1	
C3040		ECEV0GA221	E.CAPACITOR 4V 220U	1	
C3041		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C3043		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C3045		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C3047		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C3102		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3108		ECUM1E103ZFQ	C.CAPACITOR	1	
C3117		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C3118		ECUM1E103ZFQ	C.CAPACITOR	1	
C3123		ECUM1E103ZFQ	C.CAPACITOR	1	
C3124		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C3125		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C3127		ECUX1H391JCV	C.CAPACITOR CH 50V 390P	1	
C3128		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C3129		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	1	
C3130		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C3131		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C3133		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C3134		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3135		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	
C3136		ECUM1H271JN	C.CAPACITOR CH 50V 270P	1	
C3137		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C3138		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C3198		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	1	
C3199		ECUX1H560JCV	C.CAPACITOR CH 50V 56P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C4001		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C4002		ECEV1AAN100	E.CAPACITOR 10V 10U	1	
C4003		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C4004		ECST1CY335Z	T.CAPACITOR 16V 3.3U	1	
C4005		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C4006		ECUM1E153KBN	C.CAPACITOR CH 25V 0.015U	1	
C4007		ECUM1C153KBV	C.CAPACITOR CH 16V 0.015U	1	
C4008		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C4009		ECST1CY225Z	T.CAPACITOR 16V 2.2U	1	
C4010		ECUX1H222KBV	C.CAPACITOR CH 50V 2200P	1	
C4011		ECUX1H122KBV	C.CAPACITOR CH 50V 1200P	1	
C4012		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C4013		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C4014		ECUM1C153KBV	C.CAPACITOR CH 16V 0.015U	1	
C4015		ECEV0JA470	E.CAPACITOR 6.3V 47U	1	
C4016		ECST1CY335Z	T.CAPACITOR 16V 3.3U	1	
C4017		ECST1CY225Z	T.CAPACITOR 16V 2.2U	1	
C4018		ECST1CY335Z	T.CAPACITOR 16V 3.3U	1	
C4019		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C4020		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C4021		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C4022		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C4023		ECUM1E223KBN	C.CAPACITOR CH 25V 0.023U	1	
C4024		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C4025		ECUM2A822JCM	C.CAPACITOR CH 10V 8200P	1	
C4026		ECUX1H391JCV	C.CAPACITOR CH 50V 390P	1	
C4027		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C4028		ECUM1E223KBN	C.CAPACITOR CH 25V 0.023U	1	
C4029		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C4031		ECUX1H682KBV	C.CAPACITOR CH 50V 6800P	1	
C4032		ECUX1H102KBV	C.CAPACITOR CH 50V 1000P	1	
C4033		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C4036		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C4040		ECQV1H683JZ	P.CAPACITOR 50V 0.068U	1	
C5004		ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C5005		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5006		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C5007		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5008		ECUM1H472KBN	C.CAPACITOR CH 50V 4700P	1	
C5009		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C5010		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C5011		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5012		ECST1CY105Z	T.CAPACITOR 16V 1U	1	
C5013		ECUM1E103ZFQ	C.CAPACITOR	1	
C5014		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C5015		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5016		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C5017		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5018		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C5019		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5020,21		ECUX1H100CCV	C.CAPACITOR CH 50V 10U	2	
C5022		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5023		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C5025		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C5026		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5027,28		ECUX1H100CCV	C.CAPACITOR CH 50V 10U	2	
C5029		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C5030,31		ECUM1E103ZFQ	C.CAPACITOR	2	
C5032		ECUX1C473ZFV	C.CAPACITOR CH 16V 0.047U	1	
C5033,34		ECUM1E333KBN	C.CAPACITOR CH 25V 0.033U	2	
C5035,36		ECUM1E103ZFQ	C.CAPACITOR	2	
C5038		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C5039		ECUX1H121JCV	C.CAPACITOR CH 50V 120P	1	
C5040		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C5041		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C5042		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	
C5044,45		ECUM1E333KBN	C.CAPACITOR CH 25V 0.033U	2	
C5046		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C6001		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C6002		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6003		ECUX1H100CCV	C.CAPACITOR CH 50V 10U	1	
C6004		ECRKN030G21	TRIMMER	1	
C6005		ECST1CD226Z	T.CAPACITOR 16V 22U	1	
C6006		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C6008		ECEV0JA220	E.CAPACITOR 6.3V 22U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C6009-11		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C6012		ECST1CC106Z	T.CAPACITOR 16V 10U	1	
C6013		ECST1AY335Z	T.CAPACITOR 10V 3.3U	1	
C6014,15		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	2	
C6017		ECUM1C225ZFM	C.CAPACITOR CH 16V 2.2U	1	
C6019-22		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	4	
C8002		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C8003		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C8005		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C8007		ECUM1E103ZFQ	C.CAPACITOR	1	
C8008,09		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	2	
C8010		ECUM1E103ZFQ	C.CAPACITOR	1	
C8011		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C8012		ECUM1E103ZFQ	C.CAPACITOR	1	
C8013		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C8014		ECST0JX226Z	T.CAPACITOR 6.3V 22U	1	
C8015		ECST0GC476Z	T.CAPACITOR 4V 47U	1	
C8016-18		ECUM1E103ZFQ	C.CAPACITOR	3	
C8021		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C8022,23		ECST1AX106Z	T.CAPACITOR 10V 10U	2	
C8024,25		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	2	
C8026		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C8027		ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	
C8028,29		ECUM1E103ZFQ	C.CAPACITOR	2	
C8031		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C8032		ECUX1C123KBV	C.CAPACITOR CH 16V 0.012U	1	
C8033		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C8034		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C8035		ECST1CY225Z	T.CAPACITOR 16V 2.2U	1	
C8037		ECUM1C185ZFN	C.CAPACITOR CH 16V 1.8U	1	
C8038		ECUM1E103ZFQ	C.CAPACITOR	1	
C8039		ECUM1C224ZFN	C.CAPACITOR CH 16V 0.22U	1	
C8040		ECUM1C474ZFN	C.CAPACITOR CH 16V 0.47U	1	
C8041		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C8043		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C8044		ECUX1H562KBV	C.CAPACITOR CH 50V 5600P	1	
C8046		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C8047		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C8048		ECUM1H070CCV	C.CAPACITOR CH 50V 7P	1	
C8050		ECUM1E103ZFQ	C.CAPACITOR	1	
C8051		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C8053		ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	1	
C8054		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C8055		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C8056		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C8096		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C8097		ECUX1H391JCV	C.CAPACITOR CH 50V 390P	1	
C8098		ECRKN030G21	TRIMMER	1	
C8099		ECST1CY225Z	T.CAPACITOR 16V 2.2U	1	
			DIODES		
D01		MA110	DIODE	1	
D1001		MA738	DIODE	1	
D1003		MA736	DIODE	1	
D1004		MA728	DIODE	1	
D1005		MA720	DIODE	1	
D1006,07		MA132K	DIODE	2	
D1008		MA720	DIODE	1	
D1009		MA132K	DIODE	1	
D1010		MA132WA	DIODE	1	
D2001,02		MA133	DIODE	2	
D2004-06		MA132WK	DIODE	3	
D3001		MA132WK	DIODE	1	
D3007		MA132WA	DIODE	1	
D3101		MA141WK	DIODE	1	
D5002		MA132WK	DIODE	1	
D5003,04		MA132WA	DIODE	2	
D6001,02		MA132WK	DIODE	2	
D6003		MA121	DIODE	1	
D6004		MA133	DIODE	1	
D6005		MA132WK	DIODE	1	
D6006		MA139	DIODE	1	
D6007,08		MA132WK	DIODE	2	
D6009		MA139	DIODE	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
D6010		MA132WK	DIODE	1	
D6011,12		MA3110-TX	DIODE	2	
D6013		MA721	DIODE	1	
D8001		MA132WK	DIODE	1	
			DELAY		
DL8001		EFDST124A13A	DELAY	1	
			FILTERS		
FL3002		ELB4C526	FILTER	1	
FL3003		VLF0803	FILTER	1	
FL3004		VLF0802	FILTER	1	
FL8001		VLF0887	FILTER	1	
FL8002		ELB3H001	FILTER	1	
			ICS		
IC01		AN2265FAS-A	IC	1	
IC1001		BA9702FS	IC	1	
IC2001		MN67512VLFA1	IC	1	
IC2002,03		LM358DB	IC	2	
IC2004		MN12821Q	IC	1	
IC2005		LM393DB	IC	1	
IC3001		VEFH18B	IC	1	
IC3002		TL8809F	IC	1	
IC4001		BA7757BK	IC	1	
IC5001		AN3345FAS	IC	1	
IC6001		UPD75108A584	IC	1	
IC6002		UPD6145G622A	IC	1	
IC6003		TC4S66F	IC	1	
IC6004		LM393DB	IC	1	
IC6005		MN12821R	IC	1	(R)
IC6006		S81250HGRD	IC	1	
IC6007		M54543AFP	IC	1	
IC8001		AN2465FHP	IC	1	
			COILS		
L1001		ELC06D017	COIL H	1	
L1002		ELL04T004R	COIL H	1	
L1003		ELC06D017	COIL H	1	
L1004		ELJPA150KF	COIL H	1	
L1006		ELL04T005R	COIL H	1	
L1007		ELJPA101KF	COIL H	1	
L1008		ELJPA470KF	COIL H	1	
L1009		ELJPA101KF	COIL H	1	
L1011		ELJPA101KF	COIL H	1	
L1012		ELJPA470KF	COIL H	1	
L2001,02		ELJPA100KF	COIL H	2	
			RESISTOR		
L2003		ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
			COILS		
L3002		ELJFA680KF	COIL H	1	
L3004,05		ELJPA101KF	COIL H	2	
L3006		ELJSC330JF	COIL H	1	
L3007		ELJPA101KF	COIL H	1	
L3008		ELJSC330KF	COIL H	1	
L3009		ELJPA150KF	COIL H	1	
L3012		ELJSC470JF	COIL H	1	
L3014		ELJFC8R2JF	COIL H	1	
L3105		ELJSC390JF	COIL H	1	
L3107		ELJPA101KF	COIL H	1	
L3108		ELJFA181KF	COIL H	1	
L3109		ELJSC330JF	COIL H	1	
L3110		ELJPA150KF	COIL H	1	
L3111		ELJFC3R9JF	COIL H	1	
L3112		ELJPA221KF	COIL H	1	
L3113		ELJFC120JF	COIL H	1	
L3114		ELJSC101JF	COIL H	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
L4001,02		ELTMR153KE	COIL H	2	
L4003		ELJPA101KF	COIL H	1	
L4004		ELJPA221KF	COIL H	1	
L5001,02		ELJPA101KF	COIL H	2	
L5003		ELJPA470KF	COIL H	1	
L5004		ELJPA101KF	COIL H	1	
L5005		ELJFC120JF	COIL H	1	
L6001		VLQ0438K330	COIL H	1	
L6002		ELJPA150KF	COIL H	1	
L8002		ELJFC100JF	COIL H	1	
L8003		ELJFC150JF	COIL H	1	
L8005		VLQ0218K471	COIL H	1	
L8007		ELJFC6R8JF	COIL H	1	
L8008,09		ELJPA150KF	COIL H	2	
			CONNECTORS		
P1001		VJP1609T	CONNECTOR(MALE)	1	
P2001		VJS2961C024	CONNECTOR	1	
P2002		VJS2959D025	CONNECTOR(FEMALE)	1	
P3001		VJS2958D006	CONNECTOR	1	
P4002		VJS2959D007	CONNECTOR(FEMALE)	1	
P5001		VJS2959D013	CONNECTOR(FEMALE)	1	
P6001		VJS2958D018	CONNECTOR	1	
P6002		VJP2961D018	CONNECTOR	1	
P6003		VJS2964C013	CONNECTOR	1	
P6007		VJS2961C010	CONNECTOR	1	
			TRANSISTORS,COMBINATIONS		
Q1001-04		2SB1073	TRANSISTOR	4	
Q1005		2SD2216	TRANSISTOR	1	
Q1006		2SD2210	TRANSISTOR	1	
Q1007		2SD2216	TRANSISTOR	1	
Q1009		2SB1462	TRANSISTOR	1	
Q1010		2SB1073	TRANSISTOR	1	
Q1021,22		2SB970X	TRANSISTOR	2	
Q2001		2SD2216	TRANSISTOR	1	
Q3005,06		2SD2216	TRANSISTOR	2	
Q3007		XP6501	TRANSISTOR	1	
Q3008		XP6401	TRANSISTOR	1	
Q3009		2SD2216	TRANSISTOR	1	
Q3104		2SC4627	TRANSISTOR	1	
Q3106		2SC4627	TRANSISTOR	1	
Q3108		2SD2216	TRANSISTOR	1	
Q3110		2SC4627	TRANSISTOR	1	
Q3112		2SD2216	TRANSISTOR	1	
Q4001		2SD1328	TRANSISTOR CHIP	1	
Q4002		2SB1463	TRANSISTOR	1	
Q4003,04		2SD2216	TRANSISTOR	2	
Q4005		2SB1219	TRANSISTOR	1	
Q4006		2SD602	TRANSISTOR	1	(R)
Q4007		2SD2216	TRANSISTOR	1	
Q5001		2SB970X	TRANSISTOR	1	
Q5003		XN4504	TRANSISTOR-TRANSISTOR	1	
Q5006		XN4504	TRANSISTOR-TRANSISTOR	1	
Q5007,08		2SA812	TRANSISTOR	2	
Q5009		2SB970X	TRANSISTOR	1	
Q6001,02		2SD2216	TRANSISTOR	2	
Q6003		2SB970X	TRANSISTOR	1	
Q8002,03		2SC4627	TRANSISTOR	2	
Q8007		2SD2216	TRANSISTOR	1	
Q8009		2SC3938	TRANSISTOR	1	
Q8010		XP6501	TRANSISTOR	1	
Q8011,12		XP4601	TRANSISTOR-TRANSISTOR	2	
			COMBINATIONS		
QR01		UN9212	TRANSISTOR-RESISTOR	1	
QR1002		XP1213	TRANSISTOR-RESISTOR	1	
QR1003		UN9213	TRANSISTOR-RESISTOR	1	
QR1005		UN9115	TRANSISTOR-RESISTOR	1	
QR1008		UN9213	TRANSISTOR-RESISTOR	1	
QR1009		UN9211	TRANSISTOR-RESISTOR	1	
QR1010		XP1501	TRANSISTOR-TRANSISTOR	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
QR1012		UN9115	TRANSISTOR-RESISTOR	1	
QR1051		XP1601	TRANSISTOR-RESISTOR	1	
QR2002		XN4113	TRANSISTOR-TRANSISTOR	1	
QR2004		XP4213	TRANSISTOR-RESISTOR	1	
QR2006		UN9210	TRANSISTOR-RESISTOR	1	
QR3013		UN9212	TRANSISTOR-RESISTOR	1	
QR3101		UN9212	TRANSISTOR-RESISTOR	1	
QR3199		UN9212	TRANSISTOR-RESISTOR	1	
QR4001		UN9210	TRANSISTOR-RESISTOR	1	
QR4002,03		UN9213	TRANSISTOR-RESISTOR	2	
QR5001		UN9212	TRANSISTOR-RESISTOR	1	
QR5002,03		XP4212	TRANSISTOR-RESISTOR	2	
QR6001		UN9113	TRANSISTOR-RESISTOR	1	
QR6002		XP1501	TRANSISTOR-TRANSISTOR	1	
QR6003		FN3L4Z	TRANSISTOR-RESISTOR	1	
QR6004		UN9113	TRANSISTOR-RESISTOR	1	
QR6005		UN9210	TRANSISTOR-RESISTOR	1	
QR6006		UN9112	TRANSISTOR-RESISTOR	1	
QR6007		UN9210	TRANSISTOR-RESISTOR	1	
QR6008		UN9212	TRANSISTOR-RESISTOR	1	
QR6009		XP1213	TRANSISTOR-RESISTOR	1	
QR6010		XN4130X	TRANSISTOR-RESISTOR	1	
QR6011		UN2130X	TRANSISTOR-RESISTOR	1	
QR6012		UN9212	TRANSISTOR-RESISTOR	1	
QR6013,14		UN9213	TRANSISTOR-RESISTOR	2	
QR8002-04		UN9212	TRANSISTOR-RESISTOR	3	
QR8099		UN9213	TRANSISTOR-RESISTOR	1	
			RESISTORS		
R01,02		VRRZ3FF1202F	.RESISTOR W	2	
R03		VRRZ2FF1501F	.RESISTOR W	1	
R04		VRRZ3FF4701H	.RESISTOR W	1	
R05		VRRZ2FF1501F	.RESISTOR W	1	
R06		VRRZ2FF2701F	.RESISTOR W	1	
R07		VRRZ1FF2000F	.RESISTOR W	1	
R08		VRRZ2FF9100H	.RESISTOR W	1	
R09		VRRZ2FF1601H	.RESISTOR W	1	
R10,11		VRRZ3EJ682F	.RESISTOR W	2	
R12		VRRZ2FF1601H	.RESISTOR W	1	
R13,14		VRRZ3FF1302F	.RESISTOR W	2	
R15		VRRZ2FF3901F	.RESISTOR W	1	
R20		ERJ3GEYJ155	M.RESISTOR CH 1/16W 1.5M	1	
R21		ERJ2GEJ273	M.RESISTOR CH 2W 27K	1	
R23		VRRZ2EJ182E	.RESISTOR W	1	
R24		VRRZ2EJ272E	.RESISTOR W	1	
R25		VRRZ2EJ182E	.RESISTOR W	1	
R26		VRRZ2EJ272E	.RESISTOR W	1	
R27		VRRZ2EJ182E	.RESISTOR W	1	
R28		VRRZ1EJ221E	.RESISTOR W	1	
R29		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R30,31		VRRZ2EJ182E	.RESISTOR W	2	
R32		ERJ2GEJ562	M.RESISTOR CH 2W 5.6K	1	
R34		VRRZ2EG182E	.RESISTOR W	1	
R35		ERJ2GEJ331	M.RESISTOR CH 2W 330	1	
R36		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R1002,03		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	2	
R1004		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	1	
R1005		ERJ6GEYJ182	M.RESISTOR CH 1/10W 1.8K	1	
R1006		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1007		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R1008		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R1009		ERJ8GEYJ391	M.RESISTOR CH 1/8W 390	1	
R1010		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R1011		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R1012		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R1013		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R1014		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R1015		ERJ8GEYJ330	M.RESISTOR CH 1/8W 33	1	
R1016		ERJ6GEYJ682	M.RESISTOR CH 1/10W 6.8K	1	
R1017		ERJ6GEYJ102	M.RESISTOR CH 1/10W 1K	1	
R1018		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R1019		ERJ3GEYG124	M.RESISTOR CH 1/16W 120K	1	
R1020		ERJ3GEYG822	M.RESISTOR CH 1/16W 8.2K	1	
R1021,22		ERJ3GEYJ182	M.RESISTOR CH 1/16W 1.8K	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R1023		ERJ3GEYJ151	M.RESISTOR CH 1/16W 150	1	
R1024		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1025		VRE0034E17C	M.RESISTOR CH 1/16W	1	
R1026		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1027		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R1028		ERJ3GEYG183	M.RESISTOR CH 1/16W 18K	1	
R1029		ERJ3GEYG273	M.RESISTOR CH 1/16W 27K	1	
R1031		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R1032		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R1035		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R1037,38		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	2	
R1044		ERJ6GEYJ221	M.RESISTOR CH 1/10W 220	1	
R1045		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R1046		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R1047,48		ERJ6GEYJ822	M.RESISTOR CH 1/10W 8.2K	2	
R1051		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R1052		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R1053,54		ERJ8GEYJ221	M.RESISTOR CH 1/8W 220	2	
			FUSE		
R1071		VSF0059	FUSE	1	
			IC		
R1072		VSF0015A08	IC PROTECTOR	1	
			RESISTORS		
R1073		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R1074		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R1075		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R1076		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R2001		ERJ3GEYG223	M.RESISTOR CH 1/16W 22K	1	
R2002		ERJ3GEYG392	M.RESISTOR CH 1/16W 3.9K	1	
R2003		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R2004		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R2005		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R2006		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R2007,08		ERJ3GEYG103	M.RESISTOR CH 1/16W 10K	2	
R2009		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R2010		ERJ3GEYJ684	M.RESISTOR CH 1/16W 680K	1	
R2011		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R2012		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R2013		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R2014		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	1	
R2015,16		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R2017		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R2018,19		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
R2020		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R2021		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R2022		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R2023		ERJ3GEYJ274	M.RESISTOR CH 1/16W 270K	1	
R2024,25		ERJ2GEJ682	M.RESISTOR CH 2W 6.8K	2	
R2026		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R2027		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R2029		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R2030		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R2032		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R2035		ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	
R2036		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R2039		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R2040		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R2041		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R2043,44		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R2046		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R2047		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R2048		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R2049		ERJ3GEYG682	M.RESISTOR CH 1/16W 6.8K	1	
R2050		ERJ3GEYG562	M.RESISTOR CH 1/16W 5.6K	1	
R2051		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R2052		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R2053		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R2054		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R2055		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R2056		ERJ2GEJ562	M.RESISTOR CH 2W 5.6K	1	
R2057		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R2058		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R2059		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R2060		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R2061		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R2062		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R2063		ERJ3GEYG471	M.RESISTOR CH 1/16W 470	1	
R2064		ERJ3GEYG392	M.RESISTOR CH 1/16W 3.9K	1	
R2066		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R2067		ERJ3GEYG334	M.RESISTOR CH 1/16W 330K	1	
R2069		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R2070		ERJ3GEYG221		1	
R2071		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R2072		ERJ3GEYG102	M.RESISTOR CH 1/16W 1K	1	
R2073		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R2074,75		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R2076		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R2077,78		ERJ3GEYJ274	M.RESISTOR CH 1/16W 270K	2	
R3002		ERJ2GEJ562	M.RESISTOR CH 2W 5.6K	1	
R3003		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R3005		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R3006		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R3009		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R3010		ERJ3GEYJ820	M.RESISTOR CH 1/16W 82	1	
R3012		ERJ3GEYJ560	M.RESISTOR CH 1/16W 56	1	
R3014		ERJ2GEJ182	M.RESISTOR CH 2W 1.8K	1	
R3015		ERJ2GEJ682	M.RESISTOR CH 2W 6.8K	1	
R3016		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R3017		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R3019		ERJ2GEJ471	M.RESISTOR CH 2W 470	1	
R3020		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R3021		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R3024		ERJ3GEYJ560	M.RESISTOR CH 1/16W 56	1	
R3025		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R3026		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R3027		ERJ2GEJ682	M.RESISTOR CH 2W 6.8K	1	
R3046		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R3049		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R3059		ERJ2GEJ471	M.RESISTOR CH 2W 470	1	
R3064		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R3066		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R3099		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R3117-19		ERJ2GEJ561	M.RESISTOR CH 2W 560	3	
R3120		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R3121		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R3127,28		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R3129		ERJ2GEJ561	M.RESISTOR CH 2W 560	1	
R3131		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R3132		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R3133		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R3135,36		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R3137		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R3138,39		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	2	
R3141		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R3142		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R3145		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R3146		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R3150		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R4001		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R4002		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R4003		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R4004		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4005		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4006		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R4007		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4008		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4009		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4010		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R4011		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R4012		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R4013		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R4014		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R4015		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R4016,17		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R4018		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R4019		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R4020		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R4021		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R4022		ERJ3GEYJ562	M.RESISTOR CH 1/16W 5.6K	1	
R4023		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R4024		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R4025		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4026		ERJ3GEYJ821	M.RESISTOR CH 1/16W 820	1	
R4027		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R4028,29		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	2	
R4030		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R4031		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R4032		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R4033		ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	1	
R5002,03		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	2	
R5004		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R5007,08		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	2	
R5011-14		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	4	
R5015		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R5016		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R5017		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R5018		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R5019		ERJ3GEYJ681	M.RESISTOR CH 1/16W 680	1	
R5020		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R5021		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R5022		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R5023		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R5024		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R5025,26		ERJ2GEJ681	M.RESISTOR CH 2W 680	2	
R5027		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R5028,29		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	2	
R5030,31		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	2	
R5033-35		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	3	
R5036,37		ERJ2GEJ681	M.RESISTOR CH 2W 680	2	
R5038		ERJ2GEJ392	M.RESISTOR CH 2W 3.9K	1	
R5039		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R5040		ERJ3GEYJ822	M.RESISTOR CH 1/16W 8.2K	1	
R5041		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R5042		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R5043		ERJ6GEYJ4R7	M.RESISTOR CH 1/10W 4.7	1	
R5044		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R5045,46		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	2	
R5047		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R5048		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R6001		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6002		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R6003		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6004		ERJ8GEYJ471	M.RESISTOR CH 1/8W 470	1	
R6005		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R6006		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R6007,08		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	2	
R6009		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R6010		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R6011		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6012		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R6013		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R6014,15		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R6016		ERJ3GEYJ394	M.RESISTOR CH 1/16W 390K	1	
R6017		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R6018		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R6019,20		EXBV8V473J	.RESISTOR W	2	
R6021		EXBV8V102J	.RESISTOR W	1	
R6022,23		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R6024		EXBV4V102J	.RESISTOR W	1	
R6025-27		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	3	
R6028		EXBV4V473J	.RESISTOR W	1	
R6029		EXBV4V223J	.RESISTOR W	1	
R6030		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R6031		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R6032		ERJ8GEYJ680	M.RESISTOR CH 1/8W 68	1	
R6033		ERJ8GEY0R00	M.RESISTOR CH 1/8W 0.00	1	
R6034		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R6035		EXBV4V473J	.RESISTOR W	1	
R6036		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R6037		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R6038		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R6039		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R6040		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R6041		ERJ8GEYJ101	M.RESISTOR CH 1/8W 100	1	
R6042		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R6043		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R6044		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R6045		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R6046		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R6047		ERJ3GEYJ392	M.RESISTOR CH 1/16W 3.9K	1	
R6048		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R6049		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R6050		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R6051		ERJ3GEYJ393	M.RESISTOR CH 1/16W 39K	1	
R6052		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R6053		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R6054		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R6055		ERJ8GEYJ100	M.RESISTOR CH 1/8W 10	1	
R6056		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R6057		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R6058		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R6059		EXBV4V102J	.RESISTOR W	1	
R6060		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R6061		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R6062		ERJ8GEYJ271	M.RESISTOR CH 1/8W 270	1	
R6063		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R6064		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R6066		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R6067		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R6099		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R8004		ERJ2GEJ471	M.RESISTOR CH 2W 470	1	
R8005		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R8006,07		ERJ2GEJ102	M.RESISTOR CH 2W 1K	2	
R8008		ERJ2GEJ273	M.RESISTOR CH 2W 27K	1	
R8009		ERJ2GEJ223	M.RESISTOR CH 2W 22K	1	
R8010		ERJ2GEJ122	M.RESISTOR CH 2W 1.2K	1	
R8011		ERJ3GEYJ271	M.RESISTOR CH 1/16W 270	1	
R8012,13		ERJ2GEJ223	M.RESISTOR CH 2W 22K	2	
R8014		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R8015		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R8016		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R8017		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R8018		ERJ2GEJ561	M.RESISTOR CH 2W 560	1	
R8019,20		ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	2	
R8021		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R8023		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R8024		ERJ3GEYJ391	M.RESISTOR CH 1/16W 390	1	
R8025,26		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R8027		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R8028,29		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	2	
R8030		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R8031,32		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	2	
R8033		ERJ2GEJ472	M.RESISTOR CH 2W 4.7K	1	
R8034		ERJ6GEYJ103	M.RESISTOR CH 1/10W 10K	1	
R8036		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R8037		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R8038,39		ERJ2GEJ103	M.RESISTOR CH 2W 10K	2	
R8040		ERJ6GEYJ225	M.RESISTOR CH 1/10W 2.2M	1	
R8041		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R8042,43		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	2	
R8045		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R8046		ERJ2GEJ821X	M.RESISTOR CH 2W 820	1	
R8047		ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	
R8048		ERJ2GEJ152	M.RESISTOR CH 2W 1.5K	1	
R8049		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R8050		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R8051		ERJ3GEYJ561	M.RESISTOR CH 1/16W 560	1	
R8052		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R8055		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R8059,60		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R8061		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	
R8063		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R8064		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R8065		ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R8067		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R8068,69		ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	2	
R8070		ERJ2GEJ222	M.RESISTOR CH 2W 2.2K	1	
R8071		ERJ2GEJ103	M.RESISTOR CH 2W 10K	1	
R8072		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R8074		ERJ3GEYJ273	M.RESISTOR CH 1/16W 27K	1	
R8075		ERJ2GEJ102	M.RESISTOR CH 2W 1K	1	
R8076		ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	
R8093		ERJ3GEYJ823	M.RESISTOR CH 1/16W 82K	1	
R8095		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R8096		ERJ3GEYJ331	M.RESISTOR CH 1/16W 330	1	
R8097		ERJ3GEYJ154	M.RESISTOR CH 1/16W 150K	1	
R8098		ERJ3GEYJ184	M.RESISTOR CH 1/16W 180K	1	
R8099		ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	
R8302,03		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	2	
			TRANSFORMERS		
T1001		ELL04T006R	TRANSFORMER	1	
T4001		EIQ6QB001T	TRANSFORMER	1	
T4002		EIQ6QB004T	TRANSFORMER	1	
			THERMISTORS		
TH8001		VRT0025	THERMISTOR	1	
			RESISTORS		
VR1001		EVM7JSX30B23	V.RESISTOR W	1	
VR1002		EVM7JSX30B52	V.RESISTOR W	1	
VR1003		EVM7JSX30B53	V.RESISTOR 5K	1	
VR2001		EVM7JSX30B15	V.RESISTOR W	1	
VR3002		EVM7JSX30B23	V.RESISTOR W	1	
VR3102		EVM7JSX30B52	V.RESISTOR W	1	
VR3104		EVM7JSX30B23	V.RESISTOR W	1	
VR4001		EVM7JSX30B14	V.RESISTOR 10K	1	
VR4002		EVM7JSX30B54	V.RESISTOR 50K	1	
VR6001		EVM7JSX30B14	V.RESISTOR 10K	1	
VR8002,03		EVM7JSX30B24	V.RESISTOR 20K	2	
VR8004,05		EVM7JSX30B54	V.RESISTOR 50K	2	
VR8006,07		EVM7JSX30B24	V.RESISTOR 20K	2	
VR8008		EVM7JSX30B14	V.RESISTOR 10K	1	
VR8009		EVM7JSX30B15	V.RESISTOR W	1	
VR8010-12		EVM7JSX30B53	V.RESISTOR 5K	3	
			CRYSTAL OSCILLATORS		
X2001		VSX0376	CRYSTAL OSCILLATOR	1	
X6001		EFOV4194E0A	CRYSTAL OSCILLATOR	1	
X8001		VSX0419	CRYSTAL OSCILLATOR	1	
	■		VTR OPERATION C.B.A.		(NLA)
			CAPACITORS		
C6201		ECUX1H330JCV	C.CAPACITOR 50V 33P	1	
C6202		ECRKN030G21	TRIMMER	1	
C6203		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C6204		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C6205		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6206		ECST0JY106Z	T.CAPACITOR 6.3V 10U	1	
C6207		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C6210,11		ECUX1H150JCV	C.CAPACITOR 50V 15P	2	
			DIODES		
D6201-06		MA132WA	DIODE	6	
D6208		MA132WA	DIODE	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
D6209		MA132WK	DIODE	1	
D6213		MA704	DIODE	1	
D6215,16		MA132WA	DIODE	2	
D6230		MA132K	DIODE	1	
			ICS		
IC6201		UPD75328G111	IC	1	
IC6202		S81250HGRD	IC	1	
IC6203		S8054ALBLM	IC	1	
IC6204		S8052ALOLG	IC	1	
			CONNECTOR		
P6201		VJS2961C018	CONNECTOR	1	
			COMBINATIONS		
Q6201		XP5501		1	
Q6202		XP1401	TRANSISTOR-TRANSISTOR	1	
Q6203		2SK198	TRANSISTOR CHIP	1	
			RESISTORS, COMBINATIONS		
R6201		EXBV4V223J	RESISTOR-RESISTOR	1	
R6202		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R6203		EXBV8V224J	.RESISTOR W	1	
R6204		ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	
R6205		EXBV4V102J	RESISTOR-RESISTOR	1	
R6206		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	1	
R6207		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R6208		EXBV4V102J	RESISTOR-RESISTOR	1	
R6209,10		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	2	
R6211		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R6212		ERJ3GEYJ100	M.RESISTOR CH 1/16W 10	1	
R6213		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R6214		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R6215		ERJ3GEYJ332	M.RESISTOR CH 1/16W 3.3K	1	
R6216		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R6217		ERJ3GEYJ105	M.RESISTOR CH 1/16W 1M	1	
R6218,19		ERJ3GEYJ225	M.RESISTOR CH 1/16W 2.2K	2	
R6220		ERJ3GEYJ333	M.RESISTOR CH 1/16W 33K	1	
R6221		ERJ3GEYJ104	M.RESISTOR CH 1/16W 100K	1	
R6222		ERJ3GEYJ223	M.RESISTOR CH 1/16W 22K	1	
R6223		ERJ3GEYJ334	M.RESISTOR CH 1/16W 330K	1	
R6224		ERJ3GEYJ474	M.RESISTOR CH 1/16W 470K	1	
R6225		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R6226		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R6227		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R6228		ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	
R6229-32		ERJ3GEYJ101	M.RESISTOR CH 1/16W 100	4	
			CRYSTAL OSCILLATORS		
X6201		VSX0439	CRYSTAL OSCILLATOR	1	
X6202		VSX0140	CRYSTAL OSCILLATOR	1	
	■	VEP02370A	DRIVE C.B.A.		(NLA)
			CAPACITORS		
C2101		ECST1AC226Z		1	
C2102		ECUM1H103KBM	C.CAPACITOR CH 50V 0.01U	1	
C2103		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	1	
C2104		ECUM1H473KBM		1	
C2105		ECUM1H223KBM	C.CAPACITOR CH 50V 0.022U	1	
C2106		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	1	
C2108,09		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C2110		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	1	
C2111-13		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C2114		ECST1AY475Z	T.CAPACITOR 10V 4.7U	1	
C2115		ECUM1H103KBM	C.CAPACITOR CH 50V 0.01U	1	
C2116		ECUM1E104KBM	C.CAPACITOR CH 25V 0.1U	1	
C2117		ECUM1H473KBM		1	
C2118		ECUM1H333KBM	C.CAPACITOR CH 50V 0.033U	1	
C2120		ECST1AX106Z	T.CAPACITOR 10V 10U	1	
C2122-24		ECUX1H103ZFV	C.CAPACITOR CH 50V 0.01U	3	
C2125		ECUM1C104KBN	C.CAPACITOR CH 16V 0.1U	1	
C2126-28		ECUX1C104ZFV	C.CAPACITOR CH 16V 0.1U	3	
C2129		ECST1AD336Z	T.CAPACITOR 10V 33U	1	
			ICS		
IC2101		AN3890FBS	IC	1	
IC2102		UN218CU	IC	1	
IC2103		AN3890FBS	IC	1	
IC2104		TDM3702		1	
			CONNECTPRS		
P2101		VJP2962C024	CONNECTOR	1	
P2102		VJS2959D018	CONNECTOR(FEMALE)	1	
P2151		VJS2959D017	CONNECTOR(FEMALE)	1	
			TRANSISTORS		
Q2111		2SD2216	TRANSISTOR	1	
			RESISTORS		
R2101		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R2102		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R2106		ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	
R2108		ERJ3GEYJ272	M.RESISTOR CH 1/16W 2.7K	1	
R2109		ERJ3GEYJ472	M.RESISTOR CH 1/16W 4.7K	1	
R2110		ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	
R2111		ERJ3GEYJ222	M.RESISTOR CH 1/16W 2.2K	1	
R2113		ERJ6GEYJ101	M.RESISTOR CH 1/10W 100	1	
R2114		ERJ3GEYJ471	M.RESISTOR CH 1/16W 470	1	
R2115		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R2116		ERJ8GEYJR33		1	
R2117,18		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	2	
R2119		ERJ8GEYJR33		1	
R2120		ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	
R2121		ERJ3GEYJ102	M.RESISTOR CH 1/16W 1K	1	
R2123		ERJ3GEY0R00	M.RESISTOR CH 1/16W 0.00	1	
R2125		ERJ3GEYJ181	M.RESISTOR CH 1/16W 180	1	
R2162		ERJ3GEYG823	M.RESISTOR CH 1/16W 82K	1	
R2163,64		ERJ3GEYG103	M.RESISTOR CH 1/16W 10K	2	
			MISCELLANEOUS		
		VMZ1672-1	BARRIER	1	
	■	VEP06698A	MECHANISM FLEXIBLE CABL		(NLA)
			C.B.A.		
			REEL SENSORS		
		ON2170-LM	REEL SENSOR	2	
		VMD1498	T REEL SENSOR HOLDER	1	
		VMD1499	S REEL SENSOR HOLDER	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP00Q29A	FOCUS ENCODER C.B.A.		(NLA)
			RESISTORS		
		ERJ6GEYJ181V	M.RESISTOR CH 180	1	
		ERJ6GEYJ473V	M.RESISTOR CH 47K	1	
		ON1004-R	PHOTO SENSOR	1	